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ABSTRACT

Unemployment among young people, particularly for minorities and the disadvantaged, has been a persistent and growing problem in this country for the past decades. In response to this situation, Congress in 1977 enacted the Youth Employment and Demonstration Projects Act, the first comprehensive job and training legislation devoted solely to youth unemployment. One of the initiatives established under this Act is the Youth Incentive Entitlement Pilot Projects, also known as the Youth Entitlement Demonstration. These projects are intended to demonstrate the efficacy of combined work and education or training as a remedy to high youth unemployment, low labor force participation and excessive school dropout rates. The Entitlement Demonstration is targeted for youth between the ages of 16 and 19 who reside in low-income households and who have not received a high school diploma or its equivalent. Survey results indicate that Entitlement demonstrations are serving the youth population most in need and are using innovative approaches to providing jobs while discouraging the dropping-out of school. The success of these approaches is likely to depend upon: (1) youth perceptions of the attractiveness of the job offer: and (2) the extent to which program operators are able to provide meaningful job experiences, accurate monitoring of school and work performance, and believable deterrents to participant non-performance. (RLV)

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SCHOOLING AND WORK AMONG YOUTH FROM LOW-INCOME HOUSEHOLDS:

A Baseline Report from the Entitlement Demonstration

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April 9, 1979

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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PREFACE

Unemployment among young people, particularly for minorities and the disadvantaged, has been a persistent and growing problem in this country for the past decades. In response to this situation, Congress in 1977 enacted the Youth Employment and Demonstration Projects Act, the first comprehensive job and training legislation devoted solely to youth unemployment. One of the four experimental initiatives established under the act is the Youth Incentive Entitlement Pilot Projects, also known as the Youth Entitlement Demonstration.

The Youth Entitlement Demonstration, with a current enrollment of approximately 30,000 youths, is unique among manpower programs in that it links a job guarantee to school attendance and performance. In essence, the demonstration agrees to provide a part-time job during the school year and a full-time job in the summer months to economically disadvantaged 16-to 19-year-old youths in 17 geographic areas around the country, with the significant provision that the youth remain in, or return to, regular secondary school or enroll in qualified alternative schools or GED programs. The demonstration will test the potential of this work incentive as a means of encouraging youths to complete their high school education and improving their longer term prospects for employment and post-secondary education.

The U.S. Department of Labor was charged with the overall responsibility for the Youth Entitlement Demonstration, and to coordinate the implementation of the program and to conduct the research which

Congress has mandated in the legislation for Entitlement, the Department of Labor selected the Manpower Demonstration Research Corporation (MDRC), a nonprofit corporation which designs, manages, and evaluates programs to aid the disadvantaged. Formed in 1974 to conduct the National Supported Work Demonstration, MDRC is funded by government and philanthropic sources and has management and research responsibilities for a number of other social programs, including the National Tenant Management Demonstration and the WIN Research Laboratory Project. In its coordinating role for the Entitlement Demonstration, MDRC has worked closely with the Labor Department's Office of Youth Programs.

The 17 sites were selected from 153 applicants and reflect the wide variety of social, economic, and geographic conditions associated with youth unemployment across the country. They are divided into two categories or tiers. Seven large-scale regions were designated as Tier I sites, and they encompass a full or partial central city area or multi-county area with a potential eligible pool of between 3,000 and 8,000 youths. The saturation conditions of a nationwide youth employment program will be examined at these sites. At the ten smaller Tier II sites, which cover less populated areas or very small portions of a city and serve between 200 to 1,000 eligible youths, more innovative approaches to the Entitlement program are to be explored. Following a short planning period, program operations began in the spring of 1978 and are scheduled to continue through 1980. Local CETA prime sponsors in the participating locations have oversight responsibility for program operations, while the schools in those areas work with them in establishing and monitoring the standards for educational attendance

and performance.

In enacting the Entitlement program, Congress enumerated a list of specific policy concerns, and a large-scale research effort has been structured to explore them in a rigorous and comprehensive fashion. First, there are questions about the meaning and feasibility of the Entitlement concept under varying local circumstances and administrative arrangements. To address these, MDRC is conducting an extensive study of the program's implementation, including the response of the prime sponsor and school systems to the unique challenges posed by Entitlement, the role of private-sector employers in a program that allows up to a 100 percent wage subsidy, and the ability of the program managers to assure an exemplary work experience. Second, Congress was interested in what the demonstration cost, and what it would cost to extend Entitlement to the rest of the country. To date, MDRC has published several reports covering both the program's implementation and costs during the start-up period.

Finally, Congress was interested in the success of the program in meeting its objectives of keeping students in school, getting high school drop-outs to return to school, and improving the short-run and longer-run employment experiences of disadvantaged youth. The research design for this study of program impacts calls for the conduct of longitudinal interviews with a sample of over 7,500 Entitlement-eligible youth at four Tier I locations and four matched comparison sites. The first, or baseline, survey was conducted by Mathematica Policy Research in the spring and early summer of 1978 and follow-up interviews will be conducted annually for three years starting in the fall of 1979.

To design and perform the impact analysis, MDRC contracted with a team of researchers at Abt Associates, Inc.

This paper, the first published from the impact analysis, uses the baseline survey data to analyze the characteristics of Entitlement-eligible youth and the nature and determinants of their school and work behavior in the absence of the program. As such, it provides a starting point against which the impact of the demonstration can be measured.

What emerges from the study is a detailed portrait of a group of young people whose features have not previously been brought into this sharp a focus. For those of us engaged in implementing and managing the Entitlement demonstration, the findings indicate unexpected challenges and opportunities. To the more general audience interested in the education and employment of disadvantaged youth, the unusual data presented in the study may also bring new insight and information.

Judith M. Gueron
Executive Vice President

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The overall design of the research reported here was planned by George Farkas and Ernst W. Stromsdorfer. The computer work for Chapters 1-5 was performed by Christine Bottom and Chapters 1-4 and Chapter 7 were written by Suzanne Barclay, Christine Bottom, George Farkas, and Ernst W. Stromsdorfer. The work reported in Chapter 6 and Appendices A, B, C, and D was planned in detail by George Farkas and Randall J. Olsen, and the calculations were carried out by Randall J. Olsen, Chapters 5 and 6, and Appendices A and B were written by George Farkas. The work was reviewed and edited by Robert Jerrett, III. Useful comments on an earlier draft were received from Judith Gueron, Joan Leiman, Loren Solnick, and Robert Taggart. On this project, George Farkas is Deputy Director of Research, Ernst W. Stromsdorfer is Principal Investigator and Director of Research, and Robert Jerrett, III is Project Director.

EXECUTIVE SUMMARY

The Program

The Youth Incentive Entitlement Pilot Projects are intended to demonstrate the efficacy of combined work and education or training as a remedy to high youth unemployment, low labor force participation and excessive school drop-out rates.

The Entitlement demonstration is targeted on youth between the ages of 16 and 19, inclusive, who reside in low-income households, and who have not received a high school diploma or its equivalent. Receipt and maintenance of a subsidized job in the public or private sector is conditional on attending school or acquiring comparable education plus satisfactory performance on the job. Specific aims of the program are:

- To bring youth back into high school; to reduce the drop-out rate; and to improve the quality and quantity of education both on the job and in school; and,
- To improve employment and education possibilities after the youth leaves the program.

The Nature of the Problem

There is a serious structural problem facing youth, especially black youth, one which has been developing for about three decades. Unemployment rates have risen dramatically and the ratio of employment to population has fallen sharply.

The exact nature and causes of this structural problem are not fully understood. At the most general level, some part of the problem is due to one's own behavior and values, independent of the schooling system and the economy. But social and economic institutions also have a bearing on the problem. Certificial and legal restrictions in the labor market, sex and race discrimination, and low quality educational programs quickly come to mind as contributing causes, but their quantitative effect is not known with precision.

The Suggested Policy Rationale

Evidence from a variety of nationwide data sets suggests that youth schooling and work related behavior must be jointly considered, both with regard to the quantity of each a particular youth engages in, and for purposes of understanding the effect of this behavior on subsequent

employment and earnings. Thus, the Entitlement demonstration focuses on encouraging a return to or retention in school by offering a subsidized public or private sector job, but if and only if one stays in school and demonstrates a minimum acceptable level of scholastic performance.

Test of the Policy Rationale

A successful policy to reduce unemployment and increase the employment/population ratio of high school drop-outs in the near term may well have the effect of inducing youth to drop out of high school before graduation. Evidence for this has been observed periodically over the past decade and a half. In the interim, national policy ignored this issue, focusing instead on providing jobs for youth, with no concern for the possible impact of these programs on increasing school drop-out behavior or any serious attempt to measure such an effect. Now, as a result of the 1977 Youth Employment Demonstration Projects Act, there are demonstration projects which explicitly tie school and work together. As a result, emphasis shifts from that of a jobs program to that of offering a job as an inducement to school enrollment and performance. Year-round employment is now offered, both on-the-job and in-school performance are required, and funds are available to serve all eligibles. This report has sought to reflect these changed emphases.

Past discussion of the youth "problem" has misspecified its nature somewhat by casting it in terms of a "transition from school to work." While persons ultimately end their formal schooling as they progress through their life cycles, posing the issue as a straight-line transition implies a simplicity in the trade-offs between these two activities which does not exist. Work and schooling are complements to some extent. Workers learn on the job. Students are sometimes provided with jobs. But work and schooling can also be substitutes since time availability is a constraint on choice. Thus, these activities are endogenous to each other. If one works more now, one can attend school less, assuming that time devoted to other activities is unchanged. Yet, if one both works more now and attends school at the same time by cutting down on other activities, it may be possible to earn or work more or acquire better schooling in the future. Thus we see a complex set of behavioral relations whose richness and variety of experience must be understood and properly modeled in

order to determine whether and how the Entitlement demonstrations affect the behavior of their intended beneficiaries.

The Study Sites and Survey

Congress appropriated $115 million during the first year of the Youth Incentive Entitlement Pilot Projects program, and, after negotiation between the Department of Labor and local prime sponsors, the program began in the spring of 1978, enrolling youth in 17 local labor markets.

Four of these labor markets were chosen as sites to study the impact of the program on the schooling and work behavior of youth. The urban sites are Baltimore, Maryland; Cincinnati, Ohio; and Denver, Colorado. In the latter two sites the area of study (the Entitlement area) is the entire city; in Baltimore, the Entitlement area encompasses only one-third of the city. The fourth study is made up of eight rural counties in Mississippi.

The four comparison sites chosen are, respectively, Cleveland, Ohio; Louisville, Kentucky; Phoenix, Arizona, and a subset of counties in Mississippi near the experimental counties.

A principal data source in this study is a longitudinal survey of eligible youths and their parents at the eight treatment and comparison sites. The study sample was selected in February and March, 1978. In order to determine the presence of program eligible youth, household screening interviews were administered to a stratified random sample of about 130,000 households. Enumerators subsequently returned to each of the program eligible households and secured baseline interviews with the eligible youths and their parents in the spring and early summer of 1978. This baseline survey captured information on demographic and family background characteristics, including family income and its sources, as well as on preprogram behavior with regard to schooling, training and work experience. The baseline survey was in no way identified with the Entitlement demonstrations. As a result of the screening and baseline interviews, a data set containing information on 7,553 youths and their parents or guardians was assembled. Three subsequent surveys of this sample are planned at approximately one year intervals. A particularly important aspect of the research design is the fact that the sample contains program eligibles at all sites, not simply eligible program participants and

non-participants at the program sites. This allows for effective statistical control of those factors which might bias the estimation of net program effects.

Prior to describing the basic characteristics of the eligible youth sample, several observations are pertinent to the understanding of these data and the behavior they reveal.

- Trade-offs can be expected between working and schooling. Working and schooling may be complements but are most likely substitutes due to the reality of time constraints.
- To consider the problem of youth drop-out and unemployment behavior as an issue of "transition from school to work" poses the problem simplistically. One does not necessarily witness a linear progress from all school to all work, especially within the sample of interest.
- Because of the complexity of choices and trade-offs among schooling, work and other activities, as well as the dynamism of changes that occur over the 16 through 19-year age range, the different ages cannot be treated as members of one teenage group. Controls for grade progress and age are vital elements of the analysis strategy.

Demographic and Family Structure

There is a critical set of socio-demographic variables which have a bearing on program eligibility, schooling, and employment behavior. The sample is most heavily concentrated among black 16- to 17-year old youths. This is particularly appropriate in view of the nature of the youth drop-out and unemployment problem. The concentration of the study sample in this socio-demographic grouping provides a strong test of the efficacy of the Entitlement demonstration projects.

Average total family income is low for the study sample, about $6,200 per year in 1977. This approximates the income of an urban family of four living at the 1977 poverty level. About half of this income is derived from labor market activity and the other half from private and public transfer payments. Approximately 55 percent of all eligibles and their families receive AFDC, Supplemental Security Income, or other public assistance payments. These benefits make up nearly one-fourth of total family income.

Parents' education, a proxy for permanent income and an index of tastes and preferences for children's education, averages slightly more

than a ninth grade education across the sample. Across the study sites, no ethnic group has a mean parent education which equals the 12th grade. Across the sample as a whole, only about one-fourth of the sample lives with both natural parents while over half live with the mother only. It is more common for a young person to live with neither biological parent than to live only with one's biological father. Only nine percent of all eligible youths are heads of households. A higher percentage of white than black youths, and 19-year old than 16-year old youths, have split off from their parents' or legal guardians' households.

Further education and employment difficulties are imposed on these youths by their status as parents. One out of every six eligible youths has a child. In contrast, one out of every 30 is or was previously married. Parental status of youths differs greatly between the sexes, but not across the racial groups. In short, the sample of program eligible youths is beset with a number of obstacles to success in school or work.

Educational Behavior

A specific goal of the Entitlement demonstration is to decrease school dropout behavior and to increase the percentage of the sample which graduates from high school or achieves equivalent education or training. It is therefore particularly important to measure individual behavior with respect to the school enrollment decision, the degree of effort expended by those enrolled, and the return received on this investment of time and effort. We are interested in this return as measured by (a) individual progress toward graduation from secondary school, (b) growth in specific knowledge and skills, and (c) growth along less easily measured dimensions such as self-confidence and self-discipline. Eventually, actual school record data will be available to aid in the investigation of these issues. However, the present analysis only provides preprogram information regarding school enrollment, highest grade attained, and time inputs to schooling.

Inspection of educational behavior in the periods immediately prior to program enrollment again demonstrates that the Entitlement demonstrations are well targeted on the youth population of concern. Fully one-third of the eligible population can be regarded as school drop-outs. Among racial groups, black youths have the highest propensity to be

enrolled in school during the 1977-78 school year. Youths of Hispanic origin have the next highest school enrollment rates, while whites exhibit the lowest rates. The white enrollment propensity is fully 30 percentage points below that of blacks. Similar patterns of racial difference have been reported by studies using national samples. In addition, large variations in enrollment exist among the sites, and reflect, in part, the racial composition of the sites and, possibly, labor market conditions. Furthermore, 1977-78 full-time school enrollment is inversely related to both age and grade attainment. For example, the enrollment rate for 16-year olds who have completed the 11th grade is 95.6 percent, while the rate for 19-year olds who have completed 8th grade or less is only 6.6 percent. The evidence also shows that family structure is a significant determinant of school enrollment. Approximately 74 percent of children living with both natural parents are enrolled in school, a rate which drops to 47 percent for children living with neither natural parent. Finally, when site enrollment rates are compared, the propensity for greater enrollment in the 1977-78 school year correlates with the average time spent in school by enrolled youths.

Evidence for a trade-off between hours spent in school and hours spent working is the low school and high work hours in Denver and Phoenix, which have tight labor markets compared to Mississippi, whose eligibles devote more hours to school and fewer hours to work. That school attendance and the unemployment rate are directly related is a well documented phenomenon.

For those both enrolled and holding a job during the 1977-78 school year, average hours spent on school homework were only slightly lower than for the sample as a whole, 8.2 compared to 8.7, respectively. However, as age increases, hours spent studying drop. There is no strong pattern to homework hours as grade in school increases. Changes in these patterns will be analyzed as the Entitlement demonstrations offer greater work opportunities to 16- and 17-year olds, the largest age groups in the eligible population.

Work Experience and Time Inputs to Working

During the school year, employment and school enrollment are substitutes rather than complements, so that incentives and disincentives must be carefully structured and firmly enforced if the Entitlement

demonstrations are to cause individuals to perform adequately at both activities. However, the net inverse relationship between these variables (the relationship measured for "otherwise identical individuals") is not very large, so that the program may not have too strong resistance to overcome.

What, then, is the employment and earnings experience of the eligible youth prior to program start-up? Between January, 1977 and May, 1978, 42.2 percent of eligible youths did not work at all. Employment nearly doubled from 14.2 percent in spring, 1977 to 27.8 percent in spring, 1978. This increase is at least partly due to aging. Employment reached 41.1 percent of eligible youths during summer, 1977. Most youths work during the summer only, and whites and Hispanics have higher employment rates than blacks, and men higher than women. White male youths face the best employment prospects; black female youths face the worst.

The average work hours per person per week (including non-working youth) was 4.4 during spring, 1977, 12.4 during the summer, 8.0 during the Fall, and 7.2 during spring, 1978. White and Hispanic youths work more than blacks, and men work more than women. Women with children supply fewer work hours per week per person than those without children. Youths who are heads of households work more than youths who live with their parents or guardians. Age has an increasing effect on labor supplied. This effect is stronger during the school year than during the summer. Youths enrolled in school on a full-time basis supply fewer average weekly work hours than youths who are not. Finally, grade attainment is positively related to the quantity of labor supplied.

Looking at the demand for youth labor, private sector employment predominates over public sector employment during the school year. In contrast, demand from the two sectors is almost equal during the summer. Fifty percent of private sector work is full-time, that is, greater than 30 hours per week, and the split between part-time and full-time work in the private sector is insensitive to seasonal fluctuations. However, public sector employment is very seasonal, and shifts markedly from part-time in the school year toward full-time employment in the summer.

Over time, and with the exception of summer, hourly wage rates exhibit an upward trend, rising from an average of $2.39 in spring, 1977

to $2.54 in spring, 1978. Men generally earn more than women, Hispanics more than whites, and whites more than blacks. The higher wages earned by Hispanics may be accounted for by the concentration of Hispanics in Denver and Phoenix, the higher wage Entitlement evaluation sites. Wage rates tend to increase as a youth ages. In-school youth, generally part-time workers, earn less than out-of-school youth. Youths making steady progress in school tend to earn higher hourly wages than those who have finished less than nine grades or are GED enrollees. This trend is no doubt due to a variety of factors associated with aging, work attachment, work experience and school enrollment and progress.

Many youths work at or below the federal minimum wage. The percentage who do so is greatest during the summer. During summer, 1977 45.3 percent of private sector workers were at or below the minimum wage. Youths working in the private sector generally make more than their counterparts in the public sector. In the private sector, summer jobs are most frequently full-time and low-wage jobs. Also, wages paid to full-time employees are higher than those paid to part-time employees. This is also generally the situation in the public sector. In the public sector, however, summer jobs are less likely to be full-time and are more heavily concentrated in the low-wage areas. In the fall, private sector jobs remain mostly full-time jobs, and wages tend to increase. In the fall, the public sector shows a dramatic shift toward part-time jobs, and wages also rise.

Thus, the employment opportunities offered by the Entitlement are consistent with the existing structure of youth employment--most employed youths work part-time during the school year and full-time during the summer. The majority of program eligibles are blacks and half of these are female--youths who face very poor employment prospects. In particular, the short-term work prospects of these youths could be enhanced by Entitlement, which offers a guaranteed job paying at least the federal minimum wage.

Interactions Between School and Work

Previous studies have failed to provide a picture of the relationship between school enrollment and work experience among youth who would

be eligible for programs such as Entitlement. And yet, without knowledge of the preprogram interrelationships among summer employment, school-year employment and school enrollment, it is impossible to assess the likely effectiveness of a program which, like Entitlement, seeks to tie these together.

This analysis examines over-time patterns of school and work behavior for otherwise identical individuals, and measures the effects of individual characteristics upon these patterns. This, in turn, shows the extent to which participation in Entitlement may involve patterns of behavior which will be new to eligible youths. For example, it is possible that for this population, simultaneous school and work are not as attractive as concentration on either school or work alone, or involvement in neither. In such a case, enrollment in the Entitlement program will depend upon the extent to which the provision of a summer job and a job during the school year is an effective "carrot" in combination with the "stick" of termination from the program if school performance is unsatisfactory. Thus, the results of this analysis provide a preliminary assessment of the extent to which program requirements are likely to conflict with existing habits and experiences.

The first major point revealed by the analysis is that school-year employment and school enrollment are negatively related. During the 1977-78 school year, 69.8 percent of the sample are enrolled in school while only 30.6 percent are at work. Eighteen percent are engaged in neither activity, 12.2 percent are at work only, 51.4 percent are in school only, and 18.4 percent are engaged in both activities. The large percentage of youths who opt for "school only" causes many more individuals to be engaged in "either activity but not both" than are engaged in "both or neither." This suggests that school and work are substitutes rather than complements.

However, the major determinants of the observed school and work distribution are propensities to do each, rather than interaction between them. The Entitlement demonstration will have to enforce incentives and disincentives in order to successfully require school and work simultaneously during the school year, but it may not meet too strong resistance on this score.

In the short run, the planned effect of Entitlement is to put youth usefully to work in school and on the job. If this occurs for even one school year, program participants will have advanced one grade further toward high school graduation, and a cumulative effect might develop, with further progress becoming easier as successes mount and the distance to the goal of high school graduation shortens. However, to the extent that higher grade attainment and increased experience and on-the-job training imply a higher earnings capacity, progress in school may be associated with pulls out of school and into the full-time labor market.

Examining first the percentages for school enrollment during 1977-78, we see that these increase steadily with increased prior grade attainment, rising from 73.7 percent for those with fewer than nine school grades, to 76.5 percent, 84.5 percent, and finally 88.3 percent for those who had completed 11th grade before the beginning of the 1977-78 school year. This is encouraging, since it supports the view that the Entitlement goal of high school graduation may be aided by a cumulative effect, in which each grade attained makes subsequent school enrollment more likely.

Perhaps the most important result is described by the youth engaged in neither school nor work. The percentage of such "societal dropouts" decreases steadily with grade attainment. For black males in Baltimore it falls from 14.2 percent to 4.5 percent as highest grade attained increases from less than ninth to the eleventh. This is a decline of more than 300 percent over the range. For other population subgroups, the magnitude of this decline is even larger. For comparable whites, the decline is from 26.4 percent to 3.5 percent.

Further study of this comparison shows that progress in school is associated with the propensity to engage in school and work simultaneously. The effect is large for blacks, but even more dramatic for whites. For whites, the increase is from 16.7 percent for those with less than nine completed grades to 54.7 percent for those who have completed eleventh grade. Again, there is support for the positive self-sustaining effects of grade progression. Once acquired, school or work attachment appears to be self-reinforcing.

In addition, even among those who have made only limited progress in school, school enrollment in one year is a strong correlate of

enrollment in the next. Of those enrolled during 1976-77, but not employed, 84.3 percent were enrolled during 1977-78. By comparison, of those not enrolled during 1976-77, either 20 percent or 11.4 percent were enrolled during 1977-78, depending upon whether the individual was employed or not during spring, 1977. The message is strongly suggestive: if Entitlement can bring a youth back to school for even one year, the effects upon school enrollment may persist. On the other hand, if a job is provided, but the youth is not in school (as in the Out-of-School Neighborhood Youth Corps), the youth's chances of subsequently returning to school may be reduced.

The next major school-work interaction shows that summer employment and subsequent school enrollment are positively related. Summer employment is more prevalent than school-year employment, 41 percent to 30.6 percent, and the most frequent pattern (46.7 percent) is to engage in neither. However, the data show that these activities are positively related. The summer/school-year employment distribution is significantly shaped by the propensity of these activities to occur either in combination or not at all.

What implication does the positive relationship between summer and school-year employment have for the likely success of Entitlement? The notion that those who desire work will wish to do so in both time periods argues for the ability of the program to attract participants. This, in turn, suggests the possibility that Entitlement could bring a large flow of youths out of the status of "work in neither time period" and into the status of "work in both time periods." Since most youth in the sample responded that they were not working because they couldn't find work, not because they didn't want it, this outcome appears to be plausible. In addition, the positive relationship between summer employment and subsequent school enrollment suggests that the goals of Entitlement do not conflict with existing patterns of behavior. Nevertheless, correct understanding of these issues awaits the analysis of program participation data.

The last interaction of note is that summer employment and subsequent school-year employment are positively related. This phenomenon points to the possibility that employment in consecutive time periods may act in a complementary fashion to produce human capital through on-the-job

training and the development of good work habits. Comparisons unadjusted for intervening factors show that summer employment, 41 percent, is more prevalent than school-year employment, 30.6 percent. In contrast, 46.7 percent of the sample work in neither time period. Additional analysis demonstrates, however, that the summer/school-year employment distribution is significantly shaped by the propensity for these activities to occur either in combination or not at all.

With respect to the incentives provided by the Entitlement program, this implies that persons who wish to work during both summer and the school year will be attracted to the program. A stream of youths could be attracted from the condition where no work is performed in either time period to the condition of working in both time periods. Since most youths in the sample responded that they were not working because they couldn't find work, not because they didn't want it, this outcome may be plausible. Still, correct understanding of these issues awaits the program participation data.

Might the Entitlement Demonstration Work?

The Entitlement demonstration is implicitly designed to work on the basis of a relationship between simultaneous employment and school attendance on the one hand and future improved employment and earnings on the other. The data reveal the following:

- School enrollment and labor supply decisions are jointly determined, both at a point in time and over time. Prior decisions and experiences in each of these spheres affect future decisions and experience.
- There is a negative relationship between school enrollment and school-year employment.
- There is a positive relationship between school-year enrollment and summer employment.
- There is a positive relationship between school-year employment and summer employment.
- That the program may be effective is suggested by the fact that as highest grade attained in school increases, those who are neither employed nor enrolled in school drops steadily.
- In short, while there is still imperfect understanding of the exact causes and cures of the youth disemployment problem, we do know that employment increases with

increased education. These data indicate that increases in schooling and its correlates, either directly or induced by the Entitlement demonstration, may ameliorate the problem.

- These positive suggestions must be tempered by an understanding that these relationships are influenced by the interaction between available opportunities to work and attend school and a person's desire to do so. At this point in the analysis, sanguine judgments about the presumed efficacy of the program are qualified by this interaction and behavioral self-selection.

1.0 POLICY ISSUES

1.1 The Problem

There is a current and severe problem of youth employment and related schooling behavior which has been developing for well over a generation. The problem has been recognized most directly by Congress in Part C, Subpart I of the Youth Employment and Demonstration Projects Act (PL 95-93, August 5, 1977). This subpart creates the "Youth Incentive Entitlement Pilot Projects" which link labor market and schooling behavior in a comprehensive program designed to increase high school attachment and work experience during one's teenage years. The ultimate intent is to benefit post-high school employment, earnings and education.

To understand the actions of Congress and the Administration and create a framework for analyzing their policies, it is useful to have a historical perspective on the nature of the problem and on the likelihood of success of the proposed policies to ameliorate it. What is the nature of the youth education and employment problem? Which groups are most severely affected? And, is the problem likely to persist?

The youth unemployment problem varies by sex, age, and ethnic group, but it is most severe for black youth. As Figure 1.1 shows, the employment/population ratio of teenagers is much lower than that for older individuals. However, the ratio for white male teenagers has shown a slight drift upward over the past 20 years, and that of white teenage females shows a more pronounced upward trend. In contrast, the employment/population ratios for black youth, and especially black males, have moved sharply downward.[1] On closer examination, one finds that the employment/population ratio for youth aged 14-17 has held constant relative to that for prime age (35-44) adults. White males aged 18-19 have suffered a secular decline, but not white females of this age. In sharp contrast, there has been a secular decline in the employment/population ratio for all black teenagers. This decline has been most severe for males, and it extends into the 20-24 year age range.

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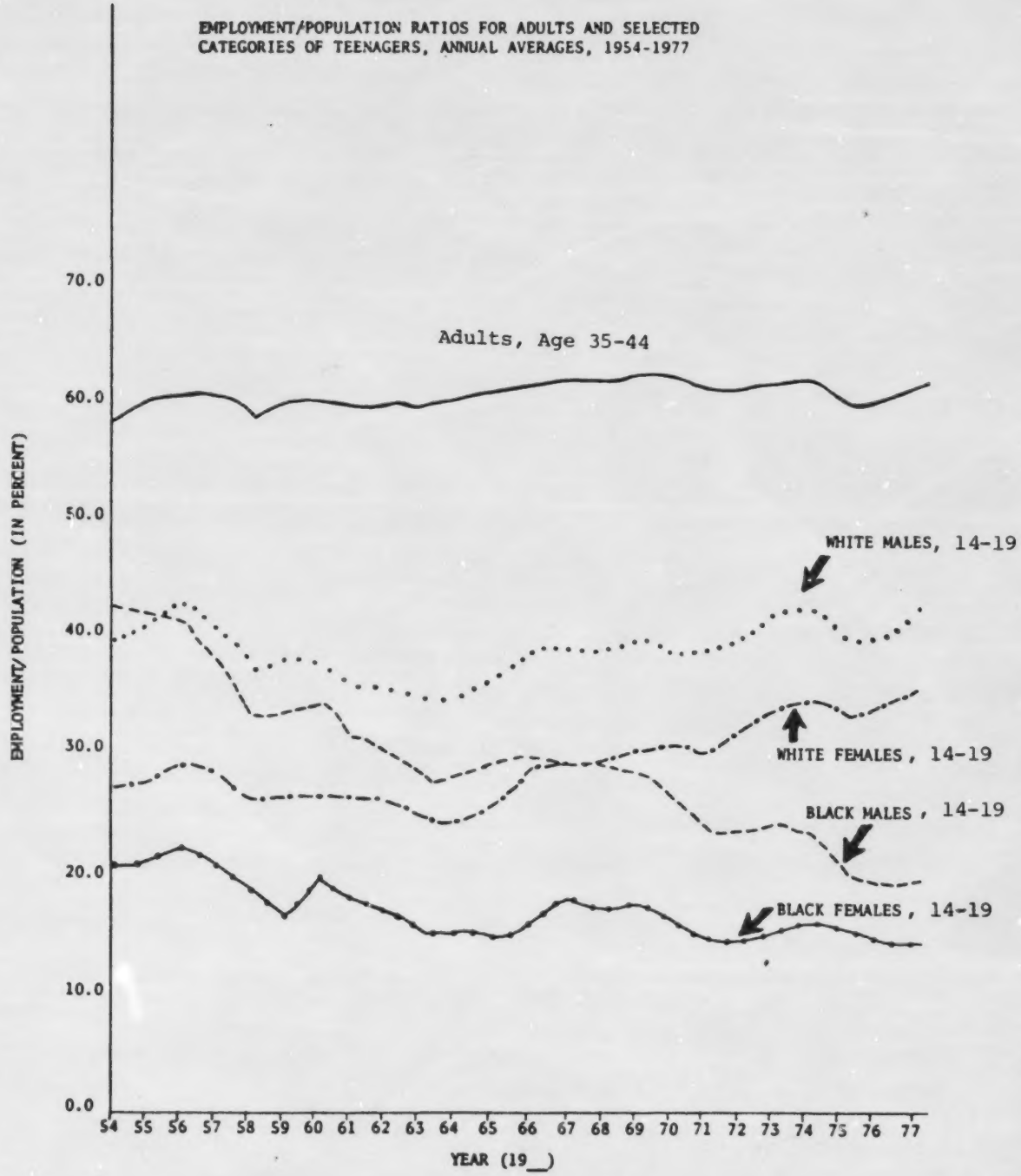
[1] See Appendix E, Table E1.1 for labor force participation rates and unemployment rates in addition to employment/population ratios.

FIGURE 1.1



Source: Orley Ashenfelter, "What Do Teenage Unemployment Statistics Measure?" in Naomi Berger Davidson, ed., Supplementary Papers from the Conference on Youth Unemployment: Its Measurement and Meaning, Washington, D.C.: U.S. Department of Labor, Employment and Training Administration, October 1978.

In corroboration, the Interagency Task Force on Teenage Unemployment recently judged that a severe structural unemployment problem exists for black youth. By contrast with the situation for whites, non-inflationary increases in aggregate demand were not deemed likely to significantly ameliorate the employment problems facing black youth.[1] Thus, in the face of well known demographic shifts, it was judged that the labor market "appears to be quite flexible in terms of absorbing white teenagers, but not so with respect to black teenagers."[2] The efforts of the Task Force to discern the causes of this structural problem were inconclusive. Under present labor market conditions, black youths find it much more difficult to locate a job when entering the labor market, but the available data shed little light on the reasons for this. Finally, the Task Force was unable to specify the precise contribution of locational factors, differential educational attainment or minimum wage legislation to the current state of affairs. In short, there is an inadequate understanding of the underlying causes of this severe social and individual problem.

Prospects for the Future. What will be the proportional and absolute dimensions of this problem in the future? Projections based upon known births demonstrate that the size of the 16 to 19 year old age group will have grown from 15.3 million in 1970 to 16.7 million in 1980, but will drop to 13.6 million by 1990. (See Table 1.1) As a proportion of the total population aged 16 and over, this group drops from 10.01 percent in 1980, to 7.38 percent a decade from now. While labor force participation rates are expected to rise for this age group, they will also rise for older age groups, so that 16 to 19 year olds are estimated to be 9.14 percent of the labor force in 1980, but only 6.88 percent of a much larger labor force by 1990.[3]

Accordingly, one can expect some improvement in employment conditions for youth simply as a result of the absolute drop in numbers of youth in the labor force. An estimated 1.5 million fewer youth will be in the labor force in 1990, in contrast to 1980. But, among some subgroups of these later birth

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[1] Interagency Task Force on Teenage Unemployment, Office of the President, "Draft Report of the Task Force on Teenage Unemployment," October 26, 1977.

[2] Ibid., p.4.

[3] See Farkas (1979), Ryscavage (1978), and Smith (1979) for discussion of some of the issues surrounding these projections.

TABLE 1.1

TOTAL POPULATION, TOTAL LABOR FORCE AND LABOR FORCE PARTICIPATION RATES, BY SEX AND AGE, 1970 TO 1990

Sex and Age	Total Population* July 1			Total Labor Force,* Annual Averages			Labor Force Participation Rates, Annual Averages		
	Actual	Projected		Actual	Projected		Actual	Projected	
	1970	1980	1990	1970	1980	1990	1970	1980	1990
Total Population, 16 Years and Older	142,958	167,659	183,746	85,902	103,759	115,925	60.1	61.9	63.1
Males, 16-19	7,747	8,466	6,897	4,395	5,239	4,310	56.7	61.9	62.5
Females, 16-19	7,528	8,216	6,661	3,250	4,246	3,669	43.2	51.7	55.1

Source: Bureau of Labor Statistics, U. S. Department of Labor, Employment and Earnings, Vol. 24, No. 10, October 1977, Table E-2, p. 297.

Notes: *All quantities are in units of 1,000.

cohorts, high unemployment rates are likely to persist, particularly since such rates are associated with structural, social and economic conditions which have been developing for more than three decades. And, although our society has been engaged in discussing the "transition from school to work" problem since the early 1960's, much of that discussion has occurred in an informational and scientific vacuum. Thus, the inability of the Interagency Task Force to reach unambiguous conclusions regarding the causes of the problem is understandable.

1.2 A Proposed Solution: Simultaneous Work and Schooling

Despite the lack of detailed knowledge concerning the root causes of the youth problem, the severity of this problem has prompted action in the passage of the Youth Act. With respect to the Entitlement demonstrations, Congress has decided to try out a program in which a part-time job during the school year and a full-time job during the summer are made available to all eligible youth who are enrolled and making satisfactory progress in high school or a GED Program. We are thereby able to discover whether this is a sufficiently attractive offer to lead to reasonably high program enrollment, and whether the combination of simultaneous work and school leads to productive results, in the short- and/or long-run. This "package deal" aspect of the program is of particular interest, since, in combination with the provision of "entitlement" (the offer to serve all eligibles who seek to enroll), it is what most clearly distinguishes the program from its predecessors (the Neighborhood Youth Corps, the Youth Conservation Corps, SPEDY). Some results reported from the National Longitudinal Study of Young Men and Women speak to the consequences of different schooling/work patterns for youth.

As Table 1.2 shows, those male youth who were out of school and out of the labor force when they were aged 16 to 19 had an employment rate of only 78.9 percent by the time they reached ages 23 through 26.[1] By contrast, men who were either in school, or out of school but in the labor force between the ages 16 and 19, had an employment rate in excess of 90 percent when they were aged 23 through 26. The disparity between the later performance

[1] These results describe "snapshots" of the same population at two points in time.

TABLE 1.2

LABOR FORCE STATUS AT AGES 23-26 AS A FUNCTION OF SCHOOL ENROLLMENT AND LABOR FORCE STATUS AT AGES 16-19[1]

Status and Age	23-26 Years of Age					
	Men			Women		
	Employed	Unemployed	Out of Labor Force	Employed	Unemployed	Out of Labor Force
16-19 Years of Age						
In School:						
Employed	92.2	5.1	2.7	67.8	8.4	23.8
Unemployed	92.0	8.0	0.0	51.4	6.8	41.9
Out of labor force	91.4	3.7	4.9	67.4	7.2	25.4
Out of School:						
Employed	95.2	1.7	3.1	60.4	6.1	33.6
Unemployed	89.7	6.9	3.4	42.3	8.5	49.3
Out of labor force	78.9	7.9	13.2	37.7	7.7	54.5

[1]These are gross effects, unadjusted for any independent variables other than age and sex.

Source: Wayne Stevenson, "The Relationship Between Youth Employment and Future Employability and Earnings," in Naomi Berger Davidson, Ed., Supplementary Papers from the Conference on Youth Employment: Its Measure and Meaning, Washington, DC: U.S. Department of Labor, Employment and Training Administration, Office of Youth Programs, October 1978.

of the out of school/out of labor force group and the other groups is even more pronounced for females. These patterns of behavior are similar for other data sets, such as the National Longitudinal Study of 1972 High School Seniors analyzed by Meyer and Wise (1978). Thus, we may expect that although none of these data sets is directly focused on youth from low-income households, the target group for the Entitlement demonstrations, the finding that out of school/out of work youth have the greatest employment and earnings difficulties as adults is likely to extend to program eligibles also.

Table 1.3 translates these results into implications for earnings. Here, tabulations are presented separately by race. We see that within racial groups, women and men who were both out of school and out of work as youths generally earned less as adults than the other groups. In other words, school/work status at ages 16 to 19 is an important predictor of employment and earnings seven years later.

What policy implications can be drawn from these results? The most direct implication is that it is important to keep youth from falling into the group that is neither in school nor at work. A second is that as far as short-run impacts on earnings are concerned, it may not matter whether this is accomplished through full-time schooling only, school combined with work, or full-time work only (these three groups display roughly equal earnings in Table 1.3).

Entitlement will not be attractive to youth who wish to concentrate on school alone, to the exclusion of work. It will be attractive to those who wish to work, but are unable to find a job on their own. Since it provides a year-round job, it should be particularly attractive to such youth. However, for those youth who wish to work, but would rather not be in school, Entitlement may pose a difficult choice. The outcome of that choice will partly determine the success of the program in altering the situation of those youth most in need of assistance.

TABLE 1.3

MEAN ANNUAL EARNINGS AT AGES 23-26 AS A FUNCTION OF LABOR FORCE AND SCHOOL ENROLLMENT STATUS AT AGES 16-19[1]

Status and Age	23-26 Years of Age			
	Men		Women	
	White	Black	White	Black
Grand Mean	7622	5713	3695	3518
16-19 Years of Age				
In School:				
Employed	7948	5989	3936	4004
Unemployed	7445	5852	3246	2532
Out of labor force	7546	6095	3944	3691
Out of School:				
Employed	7481	5596	3793	3790
Unemployed	7287	4857	2871	2988
Out of labor force	5834	3940	2871	2855

[1]Adjusted to account for differences in education, socioeconomic status, marital status, age, and living in an SMSA.
All mean effects are significant at the 95% level of confidence or higher.

Source: Wayne Stevenson, "The Relationship Between Youth Employment and Future Employability and Earnings," in Namoi Berger Davidson, Ed., Supplementary Papers from the Conference on Youth Unemployment: Its Measure and Meaning, Washington, DC: U.S. Department of Labor, Employment and Training Administration, Office of Youth Programs, October 1978.

1.3 Plan of the Report

The remainder of this report is broken down into five additional chapters, plus attendant appendices.

Chapter 2 deals with the major conceptual and methodological issues which may constrain or enhance the nature of our analysis and the interpretation of our results. It also includes a summary description of the full baseline data set.

Chapter 3 provides a first description of the data set for this report. It sets forth the basic demographic characteristics of the sample, both in study sites and control sites, and also summarizes family background characteristics (including family income and its sources), the living arrangements of eligible youth, and their fertility and marital behavior.

Chapter 4 summarizes preprogram schooling behavior.

Chapter 5 summarizes preprogram work experience.

Chapters 4 and 5 summarize, with cross-tabulations and mean-differences, the nature and levels of school and work attachment and experience, and their dependence upon demographic, family background, and other characteristics, taken two or three at a time. Chapter 6 and Appendices A and B report the result of fitting a multivariate model for the prediction of summer employment, school-year employment, and school enrollment to these same data. Chapter 6 sets forth the basic results of this exercise; Appendices A and B describe these in greater detail. As a consequence of this work with a multivariate model, the estimates of net effect reported in Chapter 4 and 5 are sharpened, and the joint determination of propensities toward school and work is explained. This behaviorally more precise model is a first step toward the models to be used in the impact analysis to come.

Chapter 7 provides a brief summary of the results.

1.4 Place This Report in a Series of Reports

This report is the first of several which discuss the program's impacts and participation rates. The next major report will be a preliminary analysis of program participation through December, 1978, scheduled to be made available during summer, 1979. This will be followed by analyses of

short-run program impacts, and eventually, of longer-run impacts. All of the topics addressed in this report will be re-addressed in later reports. In addition, many new ones will be explored. As the data come in, we will use them to answer two sorts or questions: (a) Questions concerned with general issues surrounding the patterns and determinants of school and work related behavior of eligible youth; and (b) Questions tightly focused on the impact and effectiveness of the Entitlement demonstrations.

2.0 CONCEPTUAL AND METHODOLOGICAL ISSUES

2.1 Introduction

A review of the evidence concerning teenage employment and schooling behavior has shown that there is a clearcut interrelation between these two activities. Congress, in passing the Youth Act of 1977, appears to be on the right track.

However, past discussion of the "problem" has misspecified its nature somewhat by casting it in terms of a "transition from school to work." Thus, while persons ultimately end their formal schooling as they progress through the life cycle, posing the issue as a straight line transition implies a simplicity in the trade-offs between these two activities which does not exist in real life. Work and schooling are complements to some extent. Workers learn on the job. Students are sometimes provided with jobs. But work and schooling can also be substitutes since time availability is a constraint on action. That is, these activities are endogenous to each other, given the realities of time constraints. If one works more now, one can attend school less, assuming that time devoted to other activities is unchanged. Yet, if one both works more now and attends school at the same time by cutting down on other activities, it may be possible to earn or work more or attend better schooling in the future. We are clearly describing a complex set of behavioral relations whose richness and variety of experience must be understood and properly modeled in order to determine whether and how the Entitlement demonstrations affect the behavior of their intended beneficiaries. To achieve this requires a very special data set and fairly sophisticated methods of analysis. This chapter describes the data set and presents some of the methodological and conceptual considerations which must be clarified in order to achieve success in the impact analysis to come.

2.2 The Study Sites and Survey

Congress appropriated $115 million during the first year of the Youth Incentive Entitlement Pilot Projects program, and, after negotiation between the Department of Labor and local prime sponsors, the program began in the spring of 1978, enrolling youth in 17 local labor markets.

Four of these labor markets were chosen as sites to study the impact of the program on the schooling and work behavior of youth. The urban sites are Baltimore, Maryland; Cincinnati, Ohio; and Denver, Colorado. In the latter two sites the area of study (the Entitlement area) is the entire city; in Baltimore, the Entitlement area encompasses only one-third of the city. The fourth study site is made up of eight rural counties in Mississippi.[1]

In selecting the urban comparison sites, all major cities and Standard Metropolitan Statistical Areas in the United States were included in the universe under consideration. In the case of the comparison site for the rural Mississippi pilot site, numerous rural county clusters were examined. Comparison sites were chosen to match the pilot sites as closely as possible on two sets of characteristics: those of the target population and of the labor market. Matched sites are important in order to reduce the possibility of site bias, that is, the possibility that measured impacts may reflect site and population differences rather than the effects of the Entitlement program treatments. Accordingly, the following characteristics were examined:

- Population
- Population growth, 1960-70, 1970-75
- Size of the labor market
- Distribution of jobs across industrial sectors, particularly across government and nongovernment sectors
- Unemployment rate, general and among youth
- High school dropout rate
- Population characteristics, particularly percentage of black and other races, the percentage of Hispanic and the percentage of foreign stock
- Poverty population characteristics, particularly the percentage in poverty and the ethnic composition of those in poverty

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[1] The Entitlement Area encompasses a band of counties across the southern portion of the state. Eight of them were selected for the survey: Adams, Claiborne, Covington, Franklin, Jefferson, Jones, Wayne, and Wilkinson.

The four comparison sites chosen are, respectively, Cleveland, Ohio; Louisville, Kentucky; Phoenix, Arizona and a subset of counties in western and eastern Mississippi.[1]

A principal data source in this study is a longitudinal survey of eligible youths and their parents at the eight treatment and comparison sites. The study sample was selected in February-March, 1978. At that time household screening interviews were administered to a stratified random sample of about 130,000 households to determine the presence of program eligible youth.[2]

Enumerators subsequently returned to each of the program eligible households and secured baseline interviews with the eligible youth and their parents in the spring and early summer of 1979. This baseline survey captured information on demographic and family background characteristics, including family income and its sources, as well as on preprogram behavior with regard to schooling, training and work experience. The baseline survey was in no way identified with the Entitlement demonstrations. As a result of the screening and baseline interviews, a data set containing information on 7,553 youths and their parents or guardians was assembled. Three subsequent surveys of this sample are planned at approximately one year intervals.

The greatest strength of this data set lies in the light it can shed on the situation and behavior of an important, but infrequently surveyed group. These are older teenagers from poverty families, often black, often living either in inner cities or rural areas, and often either out-of-school or making less than regular progress in school. The large sample size relative to its narrow age range permits an examination in unprecedented detail of the distinctive changes which accompany aging during late adolescence in this population. In addition, the across-site variation built into the research design provides an important opportunity to study the effects of local labor markets and school systems upon this behavior. By comparison, the National Longitudinal Study of High School Seniors of the Class of 1972, which contains

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[1] The comparison counties in Mississippi are: Clarke, Humphreys, Lauderdale, Shirley, Smith, and Washington.

[2] See Appendix Tables E2.1, E2.2 and E2.3 for exact definitions of program eligible youth, the definition of income and the Official U.S. Poverty Guidelines for 1977.

approximately 23,000 observations, reports on what is almost an entirely different population--one that has attained twelfth grade, contains no dropouts, is predominantly white, having a high propensity to graduate from high school and go on to college. Results obtained with the Entitlement data, when contrasted with findings from the National Longitudinal Study and, similar data sets (see, for example, Meyer and Wise, 1978), promise to provide relevant policy guidance for, and insights into the behavior of, the American mainstream and the American underclass in their formative years.

In addition, the research design allows the most effective statistical control for selection bias short of that provided in a classical experimental design. The sample contains "program eligibles," not simply program participants. In addition to the presence of participants and nonparticipants at the Entitlement sites, the inclusion of equally defined "nonparticipants," at comparison sites promises effective control of potential self-selection bias and site effects.

2.3 Some Issues of Conceptualization and Measurement

In principle, both school enrollment and employment are simple binary variables. At any point in time an individual is or is not enrolled in school, is or is not holding a job, or both. However, it must be recognized that among individuals engaged in one or both of these activities, much variation exists in the amount of time spent and the degree of effort expended on school and work. In addition, since these activities are in competition for an individual's time during the school year, but not (usually) during the summer, the behavioral relationships governing schooling and work will likely differ in the two periods. Furthermore, during the school year these activities will probably be found to be substitutes rather than complements, and propensities to engage in them will be inversely related, other things being equal.

This study considers the school enrollment and work decisions as binary variables and also examines the hours expended on these activities and the wage rates received for working. In addition, it examines summertime and school-year employment separately and undertakes analyses in which outcomes on these variables are specified as jointly determined with the school enrollment decision.

The sampled individuals in the data set range in age from 15 through 19. These different age groups should not, however, be thought of as a single group of "teenagers." Rather, it must be recognized that at older ages the sample is not fully representative of the relevant birth cohorts. The reason is that only youths eligible for the Entitlement demonstration have been sampled, and such eligibility requires that high school graduation not have occurred. This means that the older youths in the sample include an unusually high percentage of those individuals whose progress toward high school graduation has been delayed or disrupted. Likewise, many of these youth will display various labor market disabilities. They are thus not fully representative of the 18-19 year old low income birth cohort.

As a result, retrospective data concerning, for example, dropout rates or employment rates for current 19 year olds when they were 16 years of age, will differ from those observed for program eligibles who are currently 16. This phenomenon represents no great hardship, but indeed, is a major advantage of this sample and an inevitable consequence of the desire to obtain a snapshot of the total sample at one point in time. However, it does mean that any pooling of observations to obtain for example, a larger sample size for the estimation of dropout rates at, say, age 16, must be undertaken with caution. Accordingly, the multivariate analyses reported here include controls for highest grade attained, or age, or both, and most findings are reported separately for, or net of, these variables.

Basic explanatory variables are the usual--age, race, sex, and site--and these, with the addition of family background variables such as the presence of both parents in the family and parents' education, provide the basis for the multivariate analyses. At least two points of special interest should be noted. First, age is measured in months. Combined with the large sample size, the age precision provides an unprecedentedly detailed view of the consequences of aging during this critical life-cyle period.[1] Second, the distribution of the sample across

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[1] To the best of our knowledge the only previous empirical work with detailed age trajectories are the single-year-of-age calculations in Farkas, 1977. However, the recent work by Gustman and Steinmeier is conceptually similar to parts of our analysis in Chapters 7 and 8 (Gustman and Steinmeier, 1979).

eight sites provides an opportunity to test for the presence of local labor market and school system effects upon individual behavior. More usual data sets either focus upon individual behavior in a nationally representative sample which lacks information on local labor market demand variables; exhibit no variation in these variables because of restriction to a single site; or consist of aggregate data, often for Standard Metropolitan Statistical Areas, with little hope of specifying in detail the behavioral characteristics of individuals.[1] In this report, dummy variables are used as a first step toward the exploration of net site differences. Future work will probe more deeply into the structural determinants of these effects. Included here are rural/urban and other differences in the availability of part-time and full-time employment opportunities for youth, the wages and working conditions of these jobs, and differences in school regulations, such as required hours in class.

As far as structural, dynamic models are concerned, we have attempted to proceed cautiously in view of the little that is known regarding the complex causality of decision-making during the transition from school to work. Thus, one would expect that with the highest grade attained in school held constant, increasing age will be positively associated with the propensity to be employed and negatively associated with the propensity to be enrolled in school. But, in both cases, this relationship exists due to the correlation of age with unmeasured variables. For example, when one focuses upon those who have only attained tenth grade, and lets age range from 16 to 19, one picks up increasingly higher proportions of individuals who have both had difficulty with school and who have had a longer time to gain some experience with and attachment to the labor market. These unmeasured variables can be proxied by lagged values of school enrollment and work experience, a strategy adopted here. But even in this case, one cannot fully capture the underlying structural determinants of individual choice. In addition, higher grade attainment represents greater school attachment, increased

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[1] Gustman and Steinmeier do explicitly consider the labor demand conditions in their analysis of the youth labor market and schooling behavior. We are indebted to Alan Gustman for emphasizing the dangers of misspecification of labor supply estimates when demand conditions are improperly considered in this type of analysis.

individual skill growth, and progress toward graduation, so that it can be expected to exert its own net effect upon future behavior as well as to produce differences in the effects of other explanatory variables.

The implementation of this approach requires reasonably complex econometric work. As a research strategy, however, all significant findings and analyses are first displayed and discussed by means of cross tabulations and comparisons of mean differences among variables. Then, a variety of multivariate specifications of the determinants of school enrollment and work experience are introduced, the most complex of which estimates separate equations by highest grade attained, with age and lagged values of school enrollment and work experience included among the explanatory variables. In general, results are remarkably consistent across different specifications. The emphasis in reporting these results is on the substantive story they tell, rather than on the technical aspects of the telling.

2.4 The Full Sample

This section examines three demographic characteristics for the 7,533 youth interviewed in the baseline survey. Table 2.1 presents the site and racial distribution of the sample. Except in Baltimore and its control site, Cleveland, the control sites have approximately half the population of the pilot sites. As noted above, the pilot and control sites in Mississippi are the only rural sites. Minority representation in the sample is very high--83.8 percent. This is due, in part, to the greater presence of black families among the low income population and, in part, to the inner city or Southern rural nature of the sample. Hence, except in Denver and Phoenix where the sample is heavily Hispanic, black youths account for the majority. In fact, in Cincinnati, Baltimore, Cleveland and the Mississippi sites, black youths constitute from 80.9 percent to 90.0 percent of the sample. The "other" category is composed of those eligibles who reported their race as American Indian, Alaskan native, or Asian or Pacific Islander. Across sites, Phoenix has the largest number of eligibles in this composite grouping, but even here they only account for 6.5 percent of the sample. Overall, only 1.5 percent of

TABLE 2.1

PERCENTAGE DISTRIBUTION OF THE FULL SAMPLE
BY RACE AND SITE*

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
White	15.2 (178)	28.3 (146)	17.9 (252)	32.6 (236)	8.0 (137)	12.9 (82)	13.7 (122)	13.5 (67)	16.2 (1220)
Black	28.3 (330)	20.8 (107)	80.9 (1140)	66.1 (478)	90.0 (1542)	83.2 (529)	85.9 (766)	85.9 (425)	70.5 (5317)
Hispanic	52.7 (615)	42.9 (221)	0.9 (12)	0.9 (6)	1.2 (19)	2.4 (15)	0.1 (1)	0.4 (2)	11.8 (891)
Other	3.9 (45)	6.5 (33)	0.4 (6)	0.4 (3)	1.0 (16)	1.5 (9)	0.3 (3)	0.2 (1)	1.5 (116)
Total	100 (1168)	100 (507)	100 (1410)	100 (723)	100 (1714)	100 (635)	100 (892)	100 (495)	100 (7544)
% by Site	15.5	6.7	18.7	9.6	22.7	8.4	11.8	6.6	100.0

*There are 9 missing cases

the eligibles fall into this category. Hence, while figures for this grouping are always presented, they are not discussed because the cell sizes usually make them statistically unreliable.

Louisville has the largest percentage of white youths, although whites are still only one-third of its population. Clearly, the sample in the pilot and control sites is composed largely of non-white youths, due in part to the Entitlement area locations--usually in the inner city of large cities.

The age distribution of the full sample is displayed in Table 2.2, recorded by month of birth and summarized by trimesters. To

TABLE 2.2

AGE DISTRIBUTION OF THE FULL SAMPLE

Trimester of Birth	Age in the Second Trimester, 1978	N	%	Cumulative %
III,63	14, III	26	0.3	0.3
II, 63	15, I	21	0.3	0.6
I, 63	15, II	66	0.9	1.5
III,62	15, III	679	9.0	10.5
II, 62	16, I	686	9.1	19.6
I, 62	16, II	663	8.8	28.4
III,61	16, III	682	9.0	37.4
II, 61	17, 1	684	9.1	46.5
I, 61	17, II	638	8.4	54.9
III,60	17, III	673	8.9	63.8
II, 60	18, 1	626	8.3	72.1
I, 60	18, II	530	7.0	79.1
III,59	18, III	417	5.5	84.6
II, 59	19, I	380	5.0	89.6
I, 59	19, II	310	4.1	93.7
III,58	19, III	273	3.6	97.3
II, 58	20, I	180	2.4	99.7
I, 58	20, II	16	0.2	99.9
Total		7550	100	

There are 3 missing cases.

understand this measurement, consider those individuals born between May 1, 1963 and August 30, 1963, that is, in trimester II, 1963. During the second trimester of 1978 they passed their 15th birthday, that is, they began the first trimester of their 15th year. Accordingly, their age at this time was 15,I. The other periods of birth are summarized similarly. Fifteen year olds were permitted into the sample in order to insure sufficient observations on those who will become eligible for Entitlement in the next year of program operation. Hence, the sample includes 1,138 individuals who had not attained their 16th birthday by the end of June, 1978.[1] However, since the empirical work reported here is directed toward discovering behavioral propensities and relationships for 16- to 19-year olds and contains information on behavior only through the end of the school year in Spring, 1978, these 1,138 observations have been eliminated from the sample for this report.[2] As a result, the sample size is 7,553 - 1,138 = 6,415.[3] This is an important point, because 15-year olds are to a very great extent enrolled in school all year, a result at least partially due to the fact that in six of the sites they cannot legally drop out. (See Table 2.3.) In addition, few

TABLE 2.3

COMPULSORY SCHOOL ATTENDANCE AGE LIMITS, BY SITE STATE: 1977

State	Compulsory Attendance Age Range
Arizona	between 8 and 16
Colorado	of 7 and under 16
Kentucky	of 7 and under 16
Maryland	between 6 and 16
Mississippi	from 7 to 13
Ohio	between 6 and 18

Source: National Center for Education Statistics, Digest of Education Statistics 1977-78, Washington, D.C.: U.S. Government Printing Office, 1978, Table 34, p. 41.

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[1] This is based on a tabulation by month of birth, not shown here.

[2] In future reports, which will examine time periods when these under-aged youth have become eligible for Entitlement, these observations will be reintroduced.

[3] When looking at highest grade attained, the sample is 6,391. That is, 6415-25 missing observations.

youths at this age have ever worked. Including these individuals in the calculations at this stage of the analysis would seriously distort the sample estimates of the propensity to drop out of school or to have been employed.

Table 2.2 also reveals the sample truncation of older age groups due to the program focus on individuals who have not graduated from high school. Thus, the sample share begins to decline significantly for those aged 18, II and, by 19, II, a bit over half of the overall birth cohort has been lost through high school graduation. The fact that more of this age group has not graduated is one indication of the school progress difficulties exhibited by these youths. As noted before, this only presents an analysis problem in that the differences between the current 16-year olds and 19-year olds must be taken into account in any pooling of observations.

By way of stressing the unique and interesting nature of the issues which arise in evaluating the Entitlement demonstrations, the following points deserve emphasis:

- Trade-offs can be expected between working and schooling. Working and schooling may be complements but are most likely substitutes due to the reality of time constraints.
- To consider the problem of youth drop-out and unemployment behavior as an issue of "transition from school to work" poses the problem simplistically. One does not necessarily witness a uni-directional progress from all school to all work, especially within the sample of interest.
- Because of the complexity of choices and trade-offs among schooling, work and other activities, as well as the dynamism of changes that occur over the 16 through 19-year age range, one cannot treat the different ages as members of one teenage group. Controls for grade progress and age are vital elements of the analysis strategy.
- The data set for this analysis is derived from interviews with 7,553 youth and their parents or guardians from six urban and two rural sites. The sample is composed largely of minority youth--83.8 percent--and is quite young. Observations on 1,138 youth were dropped in this report, since these youth, aged 15 at the time of the sample, were included to be studied in later reports when they will be 16 and eligible for Entitlement. Hence, the empirical work in this report predicts the school enrollment and work experience of 16- to 19-year olds based on information on behavior through June, 1978.

- Finally, while complex and sophisticated econometric models are ultimately used to analyze this dynamic behavior in net terms, the basic data must also be set forth in a simple, descriptive form which shows the central tendencies of behavior in gross terms. More complex summaries of econometric results appear in Appendices A and B.

3.0 DEMOGRAPHIC AND FAMILY STRUCTURE CHARACTERISTICS

3.1 The Sample for This Report

This chapter analyzes the basic demographic characteristics and selected family background characteristics of the study sample. Variables such as family income, parent's education, presence of parents in the household, the youth's household status, and marriage and childbearing experience of eligible youths are discussed. The description is designed, in part, to reveal the nature of program eligibility and the need for program services. The variables featured here have the property that, at least in the short run, they affect the school enrollment and jobholding experiences of youth without in turn being affected. Attention is restricted to the sample of 6,415 individuals who were eligible for the Entitlement demonstrations as of June, 1978.

The sample of 6,415 is approximately evenly divided between males, 48.0 percent, and females,52.0 percent. In Denver, Phoenix, Cleveland and the Mississippi sites there are very nearly equal numbers of males and females. In Cincinnati, Baltimore and the Mississippi control sites there are more females, 54.9 percent, 54.0 percent, and 56.5 percent, respectively, while in Louisville there are slightly less, 47.5 percent. There is little correlation between the sex and age or the sex and race of eligibles.

Table 3.1 arrays the sample by age, race and site.[1] Even with most 15-year olds eliminated, the sample is quite young: 35.2 percent are 16 or younger, 30.5 percent are age 17, 21.4 percent are age 18 and only 13.0 percent are age 19. As noted previously, this large decrease at ages 18 and 19 is to be expected, since many youths graduate from high school during this period. Fortunately, only small differences in the age distribution across sites are observed, so that whatever effects of age do occur, they are unlikely to be confounded with site effects.

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[1] Here the age variable is as reported in answer to the question, "How old were you on your last birthday?" Individuals who were 15 at the time of the baseline questionnaire (Spring, 1978) but passed their 16th birthday by June, 1978 have been grouped with the 16-year olds in this table. (We adopt this convention for controls by age throughout Chapters 4 and 5. The multivariate analysis reported in Chapter 6 uses age coded as a continuous variable by single month of birth. This variable was summarized in Table 2.2.)

TABLE 3.1

DISTRIBUTION OF THE SAMPLE BY AGE, RACE, AND SITE

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
15 Year Olds White	5.2 (52)	9.7 (40)	6.1 (73)	10.6 (67)	2.5 (35)	6.1 (33)	5.0 (38)	6.2 (27)	5.7 (365)
Black	10.7 (108)	6.8 (28)	28.4 (339)	25.2 (158)	30.7 (436)	28.3 (152)	30.1 (228)	34.6 (150)	25.0 (1599)
Hispanic	17.9 (180)	15.0 (62)	0.3 (3)	0.4 (2)	0.4 (5)	0.9 (5)	--	0.2 (1)	4.0 (258)
Other	1.3 (13)	1.9 (8)	0.1 (1)	--	0.1 (1)	0.4 (2)	--	--	0.4 (25)
Total	35.1 (353)	33.4 (138)	34.9 (416)	36.1 (227)	33.5 (477)	35.8 (192)	35.2 (266)	41.0 (178)	35.2 (2247)
17 Year Olds White	4.1 (41)	9.4 (39)	4.4 (52)	10.7 (67)	2.7 (38)	3.7 (20)	3.8 (29)	3.2 (14)	4.7 (300)
Black	8.7 (88)	7.3 (30)	25.6 (305)	18.4 (116)	26.9 (382)	28.1 (151)	26.4 (200)	28.3 (123)	21.8 (1395)
Hispanic	15.5 (156)	15.7 (65)	0.3 (4)	0.3 (2)	0.1 (2)	0.6 (3)	--	--	3.6 (232)
Other	0.7 (7)	1.7 (7)	0.3 (3)	0.2 (1)	0.1 (2)	0.4 (2)	--	--	0.3 (22)
Total	29.0 (292)	34.1 (141)	30.5 (364)	29.6 (186)	29.8 (424)	32.8 (176)	30.3 (229)	31.6 (137)	30.5 (1949)

TABLE 3.1 (Continued)

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
18 Year Olds White	4.1 (41)	6.8 (28)	4.0 (48)	5.9 (37)	1.7 (24)	1.3 (7)	3.4 (26)	2.5 (11)	3.5 (222)
Black	6.5 (65)	3.4 (14)	16.9 (202)	13.7 (86)	20.0 (284)	16.8 (90)	20.2 (153)	15.0 (65)	15.0 (959)
Hispanic	11.6 (117)	8.5 (35)	0.1 (1)	--	0.4 (6)	0.6 (3)	0.1 (1)	--	2.6 (163)
Other	1.3 (13)	1.5 (6)	0.1 (1)	--	0.1 (2)	--	--	--	0.3 (22)
Total	23.5 (236)	20.1 (83)	21.1 (252)	19.6 (123)	22.2 (316)	18.6 (100)	23.8 (180)	17.5 (76)	21.4 (1366)
19 Year Olds White	2.4 (24)	4.8 (20)	3.4 (40)	5.5 (35)	1.3 (19)	1.7 (9)	1.3 (10)	1.4 (6)	2.6 (163)
Black	3.1 (31)	2.2 (9)	9.9 (118)	9.1 (57)	12.7 (181)	10.5 (56)	9.5 (72)	8.5 (37)	8.8 (561)
Hispanic	6.6 (66)	4.6 (19)	0.2 (2)	0.2 (1)	0.1 (1)	0.4 (2)	--	--	1.4 (91)
Other	0.4 (4)	0.7 (3)	0.1 (1)	--	0.2 (3)	0.4 (2)	--	--	0.2 (13)
Total	12.4 (125)	12.3 (51)	13.5 (161)	14.8 (93)	14.3 (204)	12.9 (69)	10.9 (82)	9.9 (43)	13.0 (828)
	100.0 (1006)	99.9 (413)	100.0 (1193)	100.1 (629)	99.8 (1421)	100.1 (537)	100.2 (757)	100.0 (434)	100.0 (6390)

There are 25 missing cases. Totals do not add up to 100 percent due to rounding.

As for racial distributions, a similar distribution of white, black, Hispanic, and "other" youths is observed across sites for each age. With Denver and Phoenix omitted, the number of Hispanic and "other" youths in the six remaining sites is so low as to be statistically insignificant. (This fact was illustrated for the entire sample in Table 2.1.)

3.2 Total Family Income

Total family income is the sum of income received by all family members from the following sources:

1) wage and salary income--total wages and salaries before taxes and other deductions;
2) self-employment income--net income from farm, non-farm business, partnership or professional practice, rental income, interest or dividends;
3) unearned income--unemployment compensation, worker's compensation, social security, railroad retirement, veteran's benefits, or private, military or government pensions, child support or alimony, money received from other sources;
4) Aid to Families with Dependent Children;
5) Supplemental Security Income;
6) cash value of food stamps;
7) other public assistance.

Although income eligibility criteria exclude income from cash welfare payments and the cash value of food stamps, such income is presented here as part of total family income. These sources of income are important to include because they, too, may have some impact upon youth schooling and employment behavior.

Table 3.2 presents mean levels of total family income and its components. Mean total family income for the entire sample of eligible youths is $6395 in 1977. This amount is mainly comprised of income from program ineligibles (usually parents), which shows a mean level of $6166. Eligible youth income is on average considerably lower with a mean of $229. Mean total family income is highest in Denver ($6726) and Phoenix ($7209) and lowest in Baltimore ($6275) and the Mississippi pilot sites ($5828). Parent income is also highest in Denver ($6439) and Phoenix ($6751) and lowest in Cincinnati ($6014), Louisville ($6034), and the

TABLE 3.2

TOTAL FAMILY INCOME: MEAN LEVEL AND SOURCES*, BY SITE**, 1977

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
Total Family Income ($)	6728 (5591)***	7209 (5771)	6326 (4437)	6342 (4848)	6275 (4226)	6442 (4026)	5828 (3693)	6425 (4229)	6395 (4618)
A) Family Income, Income from Eligible Youth Excluded	6439 (5777)	6751 (6020)	6014 (4516)	6034 (5067)	6159 (4259)	6231 (4169)	5702 (3711)	6321 (4301)	6166 (4730)
1) Earned Income	3827 (5753)	4095 (5580)	2724 (4302)	3026 (4988)	2813 (4448)	2486 (4066)	3401 (3815)	3781 (4547)	3169 (4722)
2) Self-employment Income	21 (363)	125 (991)	0 (0)	16 (398)	0 (0)	7 (172)	1 (22)	0 (1)	14 (323)
3) Unearned Income	687 (1552)	1407 (2858)	986 (2074)	803 (1649)	839 (1889)	923 (1898)	1117 (2010)	1066 (1812)	932 (1952)
4) AFDC	1146 (1643)	414 (869)	1383 (1752)	1239 (1440)	1077 (1568)	1661 (1795)	148 (334)	177 (418)	995 (1523)
5) SSI	150 (652)	154 (545)	179 (588)	141 (532)	114 (533)	89 (418)	205 (719)	238 (761)	154 (599)
6) Food Stamps	549 (727)	543 (1021)	702 (907)	794 (949)	871 (910)	983 (956)	798 (1127)	996 (1513)	769 (990)
7) Other Public Assistance	59 (411)	13 (130)	39 (347)	15 (153)	446 (1136)	82 (547)	33 (179)	63 (346)	133 (636)
B) Income of Eligible Youth	290 (1320)	458 (1472)	312 (1318)	302 (1101)	116 (829)	211 (1099)	126 (1018)	104 (698)	229 (1131)
1) Earned Income	182 (1020)	374 (1258)	150 (986)	185 (899)	50 (618)	72 (594)	79 (932)	95 (660)	132 (884)
2) Self-employment Income	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
3) Unearned Income	25 (311)	48 (315)	36 (297)	22 (189)	15 (186)	23 (253)	25 (287)	8 (170)	25 (258)
4) AFDC	54 (367)	12 (133)	96 (471)	71 (334)	15 (178)	74 (443)	2 (31)	1 (17)	44 (315)
5) SSI	10 (207)	13 (156)	3 (66)	0.1 (2)	4 (87)	6 (111)	4 (80)	0 (0)	5 (112)
6) Food Stamps	2 (467)	7 (70)	22 (159)	23 (150)	15 (117)	35 (210)	12 (150)	1 (10)	15 (226)
7) Other Public Assistance	17 (294)	4 (58)	7 (94)	0.1 (3)	17 (187)	0 (0)	4 (80)	0 (0)	8 (155)
N	1008	423	1193	631	1427	539	760	434	6415

* Total Family income is equal to the sum of (A) and (B).

** Families with no reported income are included.

*** Standard deviations are in parentheses.

Mississippi pilot site ($5702). Youth income exhibits its highest mean levels in Phoenix ($458) and Cincinnati ($312) and lowest mean levels in Baltimore ($116) and the Mississippi control site ($104). Across the sample as a whole, slightly more than half of total income is composed of wages and salaries (earned income). Except for a small component due to self employment, partnerships and farm income, the remainder is composed of a variety of transfer payments.

Over 50 percent of family income (excluding eligible youths' income) is derived from earned income in all sites except Cincinnati, Baltimore, and Cleveland. In these three sites the AFDC component is higher than the average of $995. Phoenix, the site with the largest mean family income, has a much lower than average mean AFDC component, $426. Denver, in contrast to Phoenix, exhibits an above average level of mean AFDC receipts, $1200 per family. (Families in Denver nevertheless earn greater than 50 percent of total family income.) The Mississippi pilot and control sites exhibit very low mean levels of AFDC receipts, $148 and $177 respectively. Earned income also accounts for over 50 percent of the income of eligible youths. Sites exhibiting low mean levels of family income also exhibit low mean levels of youth earned income. AFDC receipts, on average, generate the second largest contribution to youth family income. These are received to the greatest extent in Cincinnati, Louisville, and Cleveland. Roughly the same proportions of family income and of eligible youths' income are accounted for by AFDC, SSI, and other public assistance combined.

As shown in Table 3.3, slightly more than 55 percent of all eligibles and their families receive some type of welfare assistance. On average, this assistance contributes nearly one-fourth of total family income. Welfare income is a much lower proportion of total family income in Phoenix and the Mississippi sites. In Phoenix, the site with the highest mean family income, families are the least dependent (in terms of the percentage of families receiving welfare) upon welfare income. A slightly higher percentage in the Mississippi sites are dependent upon welfare. In Baltimore, Cincinnati, and Cleveland, nearly one-third of total family income is contributed by welfare payments. Approximately two-thirds of all families in these three sites along with those families in Louisville receive some type of welfare money.

TABLE 3.3

DEPENDENCE OF FAMILIES ON WELFARE PAYMENTS[1] AND FOOD STAMPS

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
Percentage of Total Family Income Contributed by Welfare Payments[1]	25.2	11.5	31.6	28.4	30.3	32.9	8.8	9.8	24.6
Percentage of Families Who Receive AFDC	53.9	26.2	58.7	60.5	44.2	59.4	24.3	25.7	46.5
Percentage of Families Who Receive SSI	9.3	9.8	11.8	9.0	7.3	6.6	14.8	15.1	10.2
Percentage of Families Who Receive Other Public Assistance[2]	5.4	2.7	5.8	3.8	19.0	4.0	5.5	9.2	8.3
Percentage of Families Who Receive Any Type of Welfare[2]	56.5	33.1	63.3	63.2	62.0	63.3	36.2	40.3	55.2
Percentage of Families Who Receive Any Type of Welfare or Food Stamps	71.5	51.4	73.1	77.3	73.8	74.5	62.6	63.6	70.2

1. Welfare payments include AFDC, SSI, and other public assistance.
2. Food stamps are not included.

Table 3.4 shows the maximum monthly AFDC payments for a family of four. The lowest levels of support are given in Mississippi and Phoenix--the very sites in which welfare payments contributed the least to the family income of eligibles. In Cincinnati, Cleveland and Baltimore, where welfare payments are a larger portion of eligibles' family income, the AFDC benefit levels are much higher. Denver with the highest AFDC benefit in Table 3.4, also has a high AFDC component of mean eligible family income, but because other welfare payments to eligibles are relatively low, does not approach Cincinnati, Cleveland and Baltimore in total welfare as a proportion of eligible income. (See Table 3.2.)

TABLE 3.4

MAXIMUM AFDC PAYMENTS PER MONTH
FOR A FAMILY OF FOUR (MOTHER AND 3 CHILDREN), 1978

SITE	AMOUNT
Phoenix	$212
Denver	$386
Louisville	$235
Baltimore	$267
Mississippi Sites	$120
Cleveland and Cincinnati	$292

3.3 Family Living Arrangements and Parents' Education

As noted above, family living arrangements may affect schooling and work behavior by influencing one's value systems, tastes for schooling and work, and the opportunity costs of work and school. Parent's education, which serves as a proxy for permanent income, also influences behavior by affecting tastes and opportunity costs.

Table 3.5 summarizes the living arrangements of eligible youths. In particular, the presence or absence of biological parents in the youth's household is displayed here. The most common household is one in which only the biological mother is present. Fully 56.2 percent of eligible youths are living with only their biological mothers. This is

TABLE 3.5

FAMILY LIVING ARRANGEMENTS, BY RACE AND BY SITE*

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
WHITE									
Both Parents	27.2	32.3	35.7	34.0	42.2	26.1	49.5	58.6	36.4
Mother Only	48.7	27.6	43.2	42.7	40.5	53.6	25.2	25.9	39.7
Father Only	4.4	5.3	3.3	3.9	0.9	8.7	6.8	0.0	4.1
Neither Parent	19.6	34.6	17.8	19.4	16.4	11.6	18.4	15.5	19.8
Total	100 (158)	100 (127)	100 (213)	100 (206)	100 (116)	100 (69)	100 (103)	100 (58)	100 (1050)
BLACK									
Both Parents	14.0	28.4	18.6	13.2	19.3	18.7	43.5	41.3	23.7
Mother Only	66.8	51.9	64.3	71.7	68.2	67.5	44.3	39.5	61.4
Father Only	5.5	2.5	2.5	1.7	1.6	1.8	0.3	4.0	2.1
Neither Parent	13.7	17.3	14.6	13.4	10.9	12.0	11.9	15.2	12.8
Total	100 (292)	100 (81)	100 (964)	100 (417)	100 (1283)	100 (449)	100 (653)	100 (375)	100 (4514)
HISPANIC									
Both Parents	26.2	37.0	40.0	40.0	50.0	61.5	0.0	0.0	30.1
Mother Only	50.7	43.6	40.0	40.0	35.7	30.8	100.0	100.0	48.3
Father Only	5.0	3.3	10.0	20.0	0.0	0.0	0.0	0.0	4.6
Neither Parent	18.1	16.0	10.0	0.0	14.3	7.7	0.0	0.0	17.1
Total	100 (519)	100 (181)	100 (10)	100 (5)	100 (14)	100 (13)	100 (1)	100 (1)	100 (744)
OTHER									
Both Parents	37.8	16.7	0.0	0.0	0.0	0.0	--	--	22.0
Mother Only	37.8	58.3	66.7	100.0	87.5	83.3	--	--	54.9
Father Only	5.4	4.2	0.0	0.0	0.0	0.0	--	--	3.7
Neither Parent	18.9	20.8	33.3	0.0	12.5	16.7	--	--	19.5
Total	100 (37)	100 (24)	100 (6)	100 (1)	100 (8)	100 (6)	-- --	-- --	100 (82)
TOTAL									
Both Parents	23.3	32.7	21.7	20.2	21.3	20.5	44.3	43.5	26.5
Mother Only	54.6	41.2	60.4	62.0	65.7	65.0	41.7	37.8	56.2
Father Only	5.1	3.9	2.7	2.5	1.5	2.6	1.2	3.5	2.7
Neither Parent	17.1	22.3	15.3	15.3	11.4	11.9	12.8	15.2	14.6
Total	100 (1006)	100 (413)	100 (1193)	100 (629)	100 (1421)	100 (537)	100 (757)	100 (434)	100 (6390)

There are 25 missing cases.

more pronounced for black youths, of whom about three-fifths, 61.4 percent, live with biological mothers only. Only in the Mississippi sites is it more likely that a youth will live with both biological parents than with his or her mother only. The least common household is made up of youths living with biological fathers only. White youths generally live with both parents or only with their biological mothers. Black youths most commonly live with their mothers only, except in the Mississippi sites. In Denver and Phoenix, Hispanic youths usually live with mothers only.

Table 3.6 displays the mean education attainment of parents, by race of the eligible youth and by site.[1] The mean grade completed by parents is ninth grade. Site means vary somewhat, with Cincinnati showing the highest mean educational attainment, close to tenth grade; while the Mississippi sites show the lowest, just over eighth grade. Parents of black and white youths exhibit a mean completed grade of 9.4 years. Parents of Hispanic youths exhibit a mean grade of 8.4 years.

A comparison of Tables 3.2 (Total Family Income) and 3.6 shows that Denver and Cleveland exhibit higher than average total family income levels and slightly higher mean educational attainment for parents. The Mississippi sites exhibit lower than average total family income and mean educational attainment for parents.

Table 3.7 shows the distribution of youths by age and race according to the youth's household head status. A youth is considered to be the head of the household if he or she has no parents or is not currently living with his or her parents or legal guardians. Across the entire sample of 6,415 youths, only 9.1 percent are the heads of their households. White youths exhibit a much higher percentage of youths who are heads of households than black youths. As indicated in Table 3.5, black youths are more prone to live with their parents (one or both) than are their white counterparts. Household status is seen to change dramatically as age increases--3.0 percent of all 16-year olds are heads of households compared to 24.6 percent of all 19-year olds.

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1. In the case of youths with no parent or adult guardians, the answer given by the youth when questioned about his/her parents was used for the parents' or adult guardians' educational attainment.

TABLE 3.6

MEAN EDUCATIONAL ATTAINMENT OF PARENTS, BY RACE AND BY SITE

Race	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
White	10.4	11.5	9.4	8.5	8.5	9.4	8.5	8.8	9.4
	(3.2)*	(2.9)	(2.5)	(2.8)	(2.3)	(2.8)	(2.8)	(2.8)	(3.0)
	[143]**	[118]	[181]	[177]	[102]	[62]	[90]	[53]	[926]
Black	10.5	8.9	9.9	10.2	9.3	9.8	8.3	8.2	9.4
	(2.6)	(3.1)	(2.2)	(2.5)	(2.4)	(2.5)	(2.8)	(2.7)	(2.6)
	[262]	[72]	[873]	[378]	[1199]	[417]	[616]	[359]	[4176]
Hispanic	8.7	7.3	9.6	10.0	9.2	7.7	11.0	4.0	8.4
	(2.4)	(2.9)	(2.6)	(3.5)	(3.1)	(2.9)	(0.0)	(0.0)	(2.6)
	[470]	[156]	[10]	[5]	[14]	[13]	[1]	[1]	[670]
Other	8.6	8.5	10.4	2.0	7.2	4.5	--	--	8.1
	(3.2)	(3.0)	(3.3)	(0.0)	(3.3)	(3.7)	--	--	(3.4)
	[30]	[20]	[5]	[1]	[5]	[6]	--	--	[67]
Total	9.5	9.0	9.8	9.6	9.2	9.6	8.3	8.3	9.3
	[905]	[366]	[1069]	[561]	[1320]	[498]	[707]	[413]	[5839]

There are 576 missing cases.

*Standard deviations in ( ).

**N in [ ].

Table 3.7

HOUSEHOLD STATUS OF YOUTHS, BY RACE AND AGE

Percent of Youths Who Are Head of Households

Race		Age	
White	18.7	16	3.0
Black	6.4	17	6.1
Hispanic	11.7	18	14.2
Other	12.2	19	24.6
	n = 6,390		n = 6,415

3.4 Teenage Marriage and Fertility

Marriage and child rearing responsibilities can radically alter the opportunity costs of attending school and of working. Consequently, this section presents a brief look at the fertility and the marital status of eligible youths. Table 3.8 shows that only 3.2 percent of all eligible youths were ever married. The likelihood of being married increases with age, but nevertheless, only 9.3 percent of 19-year olds have been or are married. An interesting statistic indicates 9.6 percent of white youths were ever married, compared with only 1.0 percent of black youths. Five percent of female youths have been married, while only 1.2 percent of male youths have done so. Approximately 25 percent of youths who are heading households are or have been married. Of the youths who are living with parents or guardians, only one percent are married.

TABLE 3.8

DISTRIBUTION OF YOUTHS WHO WERE EVER MARRIED
BY AGE, RACE, SEX, AND HOUSEHOLD HEAD STATUS

AGE	Percent Ever Married	RACE	Percent Ever Married
16	0.8 (2253)	White	9.6 (1050)
17	2.4 (1960)	Black	1.0 (4514)
18	4.5 (1373)	Hispanic	7.3 (744)
19	9.3 (829)	Other	2.4 (82)
SEX		HOUSEHOLD STATUS	
Female	5.0 (3324)	Head of Household	25.1 (147)
Male	1.2 (3088)	Not Head of Household	1.0 (56)
TOTAL	3.2 (6415)		

Table 3.9 presents the distribution of youths with children by sex, race, age, and household status. Fully 16.5 percent of all youths have had at least one child. This figure is 25.8 percent and 6.4 percent, respectively, for females and males. The incidence of childbearing rises dramatically with age. While 7.3 percent of 16-year old youths have had at least one child, 34.8 percent of the 19-year old group (and over 50 percent of 19-year old women) have done the same. By ethnic background, a higher percentage of black youths (17.0 percent) than whites and Hispanics (15.6 and 15.1, respectively), have children. The incidence of childbearing does not differ much across racial groups. However, the large differences in the percentages of females and males who reported having a child do not disappear when the two groups are broken down by ethnicity.

TABLE 3.9

PERCENTAGE OF YOUTHS WITH CHILDREN BY AGE, RACE, SEX AND HOUSEHOLD HEAD STATUS

Females		Males		TOTAL
White	24.8	White	5.9	15.6
Black	26.5	Black	6.5	17.0
Hispanic	23.0	Hispanic	7.4	15.1
Other	27.0	Other	2.2	13.4
16 years old	12.2	16 years old	1.9	7.3
17 years old	23.7	17 years old	4.6	14.4
18 years old	36.2	18 years old	9.8	23.5
19 years old	51.8	19 years old	17.2	34.8
Head of Household	66.8	Head of Household	18.8	52.9
Not Head of Household	20.0	Not Head of Household	5.7	12.8
TOTAL	25.8		6.4	16.5

n = 6415

Table 3.10 presents the distribution of single youths with children. Here slightly smaller percentage of youths have children--only 14.7 percent of single youths compared with 16.5 percent of all youths. The incidence of childbearing again rises dramatically with age. In contrast to Table 3.9, there are greater differences in the childbearing rates among single youths by racial group. Single black youths have a much higher incidence of births than do single white youths. Since single youths compose a very high proportion (96.8 percent) of the sample shown in Table 3.9, one would expect Tables 3.9 and 3.10 to display similar

statistics for the various sample subgroups. The differences in child-bearing rates across ethnic groups in the whole sample and the sample of single youths may imply two facts: white youths who have children are more likely to be married than black youths who have children; and white youths may, in general, be more likely to be married than black youths.

TABLE 3.10

PERCENTAGE OF SINGLE YOUTHS WITH CHILDREN, BY AGE, RACE, SEX AND HOUSEHOLD HEAD STATUS

Females		Males		TOTAL
White	16.3	White	3.1	9.6
Black	25.6	Black	6.5	16.4
Hispanic	17.3	Hispanic	5.4	11.0
Other	22.9	Other	2.2	11.2
16-years old	11.4	16-years old	2.0	6.8
17-years old	22.0	17-years old	4.4	13.3
18-years old	33.3	18-years old	8.8	21.1
19-years old	47.7	19-years old	14.7	30.7
Head of Household	63.8	Head of Household	9.2	46.2
Not Head of Household	19.2	Not Head of Household	5.6	12.4
TOTAL	23.3		5.8	14.7

n = 6210

3.5 Summary

This chapter has described major socio-demographic variables which have a bearing on program eligibility, schooling behavior, and employment behavior. The sample is most heavily concentrated among black 16- to 17-year old youths. This is appropriate, in view of the youth drop-out and unemployment problem described in Chapter 1. The concentration of the study sample in this socio-demographic grouping will provide a strong test of the efficacy of the Entitlement demonstration projects. Except in the case of Hispanic youths, there are small to moderate variations in the age-sex-race distribution among the study sites. None of these variations are so extreme that they cannot be adjusted for with proper statistical techniques. The age structure of the sample reflects the nature of the target population. However, the 16-year olds are much more representative of their birth cohorts than are the 19-year olds.

Average total family income is quite low--approximately that for an urban family of four living at the 1977 poverty level. About half of this income is derived from labor market activity and the other half from private and public transfer payments. Approximately 55 percent of all eligibles and their families are receiving AFDC, SSI, or other public assistance payments. These benefits make up nearly one-fourth of total family income.

Parent education, a proxy for permanent income and an index of tastes and preferences for children's education, averages slightly more than a ninth grade education across the sample. No ethnic/site group has a mean parent education which equals the 12th grade. Across the sample as a whole, only about one-fourth of the youth live with both natural parents while over half live with the mother only. It is more common for a young person to live with neither biological parent than to live only with one's biological father. Only nine percent of all eligible youths are heads of households. A higher percentage of white than black youths, and 19-year old than 16-year old youths, have split-off from their parents' or legal guardians' households.

Further educational and employment difficulties are imposed on these youths by their status as parents. One out of every six eligible youth has a child. (In contrast, one out of every thirty is or was previously married.) Parental status of youths differs greatly between the

sexes, but not across the racial groups. Of the female youths with children, many more blacks than whites are single parents. In short, the sample of program eligible youths is beset with a number of obstacles to their ability to succeed in school or work. A considerable task confronts the Entitlement demonstrations.

4.0 SCHOOL ENROLLMENT AND TIME INPUTS TO SCHOOLING

4.1 Introduction and Overview

This chapter provides our first view of the preprogram school and GED enrollment of the sample as well as measures of the hours spent in school. In combination with Chapter 5, the findings presented here serve as a preliminary charting of the territory prior to the more elaborate calculations displayed in Chapter 6 of this report. In this chapter we present a relatively broad range of results directed toward a clarification of the policy concerns of Congress and the resulting basic research issues. Complementary to this we present preliminary development of the models of behavior which will be used in the impact analyses to come.

Measuring School Attachment and Progress

A specific goal of the Entitlement demonstrations is to decrease school drop-out behavior and to increase the percentage of the sample which graduates from high school or achieves equivalent education or training. It is therefore particularly important that one accurately measure individual behavior with respect to the school enrollment decision, the degree of effort expended by those enrolled, and the return received on this investment of time and effort. This return is measured by (a) individual progress toward graduation from secondary school, (b) growth in specific knowledge and skills, and (c) growth along less easily measured dimensions such as self-confidence and self-discipline. Eventually, actual school record data will be available to aid in the investigation of these issues. However, the present analysis relies solely upon preprogram information regarding school enrollment, highest grade attained, and time inputs to schooling. This chapter begins to describe the patterns exhibited by these variables and the determinants of these patterns. In general, relatively gross effects (effects measured with few controls for correlated variables) are reported here. Net effects are reported in Chapter 6 and Appendices A and B.

4.2 Highest Grade Attained

If one summary measure of progress toward graduation is desired for the sample, described in terms of a snapshot of that sample after the completion of the 1976-77 school year, the measure of choice is the

"highest grade attained" at that time. Table 4.1 presents the distribution of this variable, separately by age group. Here, age is as reported on the baseline interview during spring, 1978, in answer to the question, "How old were you at your last birthday?" Accordingly, some individuals who were 15 at the time of the interview, but passed their 16th birthday before the end of June, have been included in the table, grouped with the 16-year olds.

TABLE 4.1

HIGHEST GRADE ATTAINED, PERCENTAGE DISTRIBUTION
BY AGE GROUP

Age* in Spring, 1978	Highest Grade Attained, June, 1977 (%)						
	≤ 8	9	10	11	GED	Total	N
16**	28.1	43.4	24.0	3.0	1.4	100	2250
17	12.0	23.9	38.6	22.7	2.8	100	1952
18	7.4	15.4	27.8	45.0	4.5	100	1365
19	11.0	17.1	25.4	40.0	6.4	100	824
Total	16.6	28.1	29.5	22.8	3.1	100	6391

There are 24 missing cases (with grade missing).

*As reported in response to the Baseline Interview question, "How old were you at your last birthday?"

**This includes individuals who were 15 years of age, but passed their 16th birthday before the end of June, 1978.

By the close of the 1976-77 school year, 16.6 percent of the sample (defined as of June, 1978) had completed less than nine school grades, 28.1 percent had completed exactly nine grades, 29.5 percent had completed exactly ten grades, and 22.8 percent had completed exactly eleven grades. Approximately 3 percent of the eligibles are enrolled in a GED program, and therefore cannot be assigned a school grade.

Of course, grade and age are correlated, with the modal grade previously attained being 9th for 16-year olds, 10th for 17-year olds, and 11th for 18- and 19-year olds. Despite this correlation, reasonable grade attainment variation exists among individuals of approximately the same age. Thus, fully 12 percent of the 17-year olds had attained no higher than 8th grade by the close of the previous school year, and similar slow progress was exhibited by 7.4 percent of the 18-year olds and 11.0 percent of 19-year olds. On the other hand, three percent of 16-year olds had completed 11th grade by the close of the previous school year, a figure which rises to 22.7 percent for 17-year olds.

The discussion turns now to school enrollment rates, enrollment histories and hours expended on schoolwork by those enrolled. It is important to keep in mind that both enrollment and hours are inputs to school progress and ultimately graduation, and that, as already noted, grade attainment is our best single measure of progress. Accordingly, the level an individual has achieved on this variable can be expected to strongly affect his subsequent behavior, and this variable ought to occupy a key role in any dynamic model of such behavior. Thus, in Chapter 6 and Appendices A and B of this report, equations to estimate the determinants of school enrollment and work experience are reported conditional on, and separately for, the different levels of highest grade attained. As a result, it is possible to decompose the preprogram process of school enrollment and progression through grades into its component parts, and to then reassemble these parts to provide a summary view of the entire process. This is useful both as an aid to understanding and as foundation for an impact analysis which is sensitive to the possible differential effects of the Entitlement demonstrations on individuals at different stages of the schooling process. In addition, since portions of older age groups have been eliminated from the sample as a result of high school graduation, conditioning on highest grade attained permits the construction of probabilistic statements which can be generalized to the 16- to 19-year old population as a whole.

4.3 School Enrollment and Enrollment Histories

Respondents were asked whether they were enrolled all year, separately for each of the five school years, culminating in the 1977-78 year. For this most recent year, 66.4 percent responded affirmatively. Accordingly, it appears that 33.6 percent of the sample should be regarded as

school drop-outs for the 1977-78 academic year. This rather high drop-out rate results from a relatively stringent definition of enrollment, since it is one which gives no credit for enrollment lasting less than the full school year. Yet this degree of enrollment is the minimum which will permit progress to the next higher grade. And even among those enrolled throughout the year, some attended infrequently, or attended regularly but may have expended little effort.

For individuals like the members of the sample, who have not graduated from high school, failure to enroll during a given school year is a significant life decision, one which is likely to have many correlates and consequences. Thus, it is reasonable to suppose that a good deal of persistence-in-state will be observed over time, with those enrolled one year likely to remain enrolled during the following year, while drop-outs are likely to remain out of school during the following year. In addition, when behavior at relatively young ages is examined, as will be the case for five-year retrospective histories taken from youths aged 16 to 19, the probability of enrollment will predominate over the probability of dropping out. Evidence for both suppositions is contained in Table 4.2

This table arrays the sample according to whether the individual was enrolled all year or not during each of the five school years, 1973-74 to 1977-78. Accordingly, $2^5 = 32$ distinct patterns of behavior are possible, although only a few of these occur with more than an insignificant frequency. Thus, fully 62.1 percent of the sample was enrolled all year during each of the previous years (pattern 11111), leaving only 37.9 percent who at least once failed to enroll all year. The second most frequent pattern was 11110 (13 percent), followed by 11100 (9.7 percent), 11000 (5.1 percent), 10000 (2.1 percent) and 00000 (1.7 percent). Taken together, these six patterns account for 93.7 percent of the cases, suggesting that "high enrollment propensity plus state persistence" is a useful descriptive summary of these data.[1]

The patterns of Table 4.2 could be displayed separately according to individual demographic characteristics, or values of school enrollment

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[1] For similar results, and more elaborate analyses of data arrayed in this manner, see Heckman, 1977; Hausman and Wise, 1978; Meyer and Wise, 1978.

TABLE 4.2
ENROLLED IN SCHOOL ALL YEAR, FIVE-YEAR HISTORY

School Years

1973-74	1974-75	1975-76	1976-77	1977-78	N	%
0	0	0	0	0	111	1.7
1	0	0	0	0	135	2.1
0	1	0	0	0	10	0.2
1	1	0	0	0	329	5.1
0	0	1	0	0	10	0.2
1	0	1	0	0	25	0.4
0	1	1	0	0	12	0.2
1	1	1	0	0	621	9.7
0	0	0	1	0	8	0.1
1	0	0	1	0	4	0.1
0	1	0	1	0	2	0.0
1	1	0	1	0	27	0.4
0	0	1	1	0	9	0.1
1	0	1	1	0	8	0.1
0	1	1	1	0	7	0.1
1	1	1	1	0	828	13.0
0	0	0	0	1	6	0.1
1	0	0	0	1	8	0.1
0	1	0	0	1	1	0.0
1	1	0	0	1	23	0.4
0	0	1	0	1	0	0.0
1	0	1	0	1	6	0.1
0	1	1	0	1	1	0.0
1	1	1	0	1	87	1.4
0	0	0	1	1	25	0.4
1	0	0	1	1	7	0.1
0	1	0	1	1	2	0.0
1	1	0	1	1	46	0.7
0	0	1	1	1	12	0.2
1	0	1	1	1	19	0.3
0	1	1	1	1	32	0.5
1	1	1	1	1	3970	62.1
					6391*	100.0

0 denotes out of school all or part of the school year.
1 denotes enrolled the entire school year.

*There are 24 missing cases.

variables at earlier years could be used to predict enrollment during 1977-78. Crosstabular experiments with each exercise produce few surprises--variables such as highest grade attained or current age are closely associated with variation in enrollment patterns, and previous enrollment history is a powerful predictor of current enrollment state.

4.4 Determinants of School Enrollment, 1977-78 School Year

It is reasonable to suppose that demographic variables, family background characteristics, previous progress in school, school enrollment and work experience exert their own net effect upon whether an individual was enrolled during the 1977-78 school year. Table 4.3 displays enrollment rates separately by site and race, and shows, somewhat surprisingly, that each variable is associated with considerable variation in school enrollment propensities.

Fully 74.3 percent of black youth were enrolled all year during 1977-78, a figure which drops to 51.4 percent for Hispanics and 44.9 percent for whites. This drop of 30 percentage points for the black/white comparison appears to be quite reliable. It is based on large cell counts, and approximately similar results hold within each site. Since it is well known that employment rates for white youth are higher than those for black youth, and one would expect employment and school enrollment to be inversely related, it is perhaps to be expected that black youth will be more attached to school than white youth. However, while this general result has been recently reported in the literature, its sheer magnitude is surprising, as well as potentially quite consequential for program inpact in view of the large proportion of the sample which is black.[1]

This table also shows large site differences. School enrollment varies from a high of 79 percent in Mississippi down to 49.2 percent in Phoenix; once again a spread of 30 percentage points. These results are in keeping with findings that Phoenix youth have relatively high employment rates, while Mississippi youth have relatively low employment rates. (See Chapter 5). It is interesting to note that, at least as regards preprogram

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[1] See Meyer and Wise, 1978, p. 3. Based on the National Longitudinal Study of High School Seniors, they report that non-whites have about a .10 greater probability of being in secondary and post-secondary school than whites.

TABLE 4.3

PERCENTAGE ENROLLED FOR THE ENTIRE 1977-78 SCHOOL YEAR, BY SITE AND RACE

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
White	54.4 (158)	49.6 (127)	41.0 (212)	30.2 (205)	36.0 (114)	52.2 (69)	55.3 (103)	65.5 (58)	44.9 (1046)
Black	71.5 (291)	66.7 (81)	71.5 (961)	64.6 (415)	72.1 (1276)	80.6 (449)	83.0 (652)	81.1 (315)	74.3 (4500)
Hispanic	51.5 (515)	42.5 (181)	80.0 (10)	80.0 (5)	92.9 (14)	84.6 (13)	100.0 (1)	100.0 (1)	51.4 (740)
Other	57.1 (35)	37.5 (24)	16.7 (6)	100.0 (1)	0.0 (8)	100.0 (6)	--	--	46.2 (80)
Total	58.0 (999)	49.2 (413)	65.9 (1189)	53.5 (626)	69.0 (1412)	77.3 (537)	79.2 (756)	79.0 (434)	66.5 (6366)

There are 49 missing cases.

behavior on this key dependent variable, the two Mississippi sites appear to be very similar, with Denver and Phoenix also showing some similarity.

Continuing to examine the effects of demographic characteristics, males are slightly more likely than females to be enrolled in school, 67.3 percent versus 65.6 percent, a result which holds for six of the eight sites. The multivariate analysis reveals that these relatively similar male/female school enrollment rates conceal differences which emerge when individuals are sorted according to the highest grade attained.

Table 4.4 shows that family background characteristics also exert a significant effect upon school enrollment. Once again, as with race and site, the maximum spread is almost 30 percentage points, with only 46.5 percent of those living with neither natural parent enrolled, while 73.6 percent of those living with both natural parents are enrolled. Of course this variable is correlated with many others. However, it continues to exert an effect even when examined in a multivariate context.

TABLE 4-4

PERCENTAGE ENROLLED IN SCHOOL OR A GED PROGRAM THE ENTIRE YEAR, BY FAMILY BACKGROUND CHARACTERISTICS

Neither Natural Parent	46.5 (930)
Mother Only	68.5 (3588)
Father Only	59.4 (175)
Both Natural Parents	73.6 (1698)
Total	66.4 (6391)*

*There are 24 missing cases.

Table 4.5 represents a first step in the direction of a dynamic representation of school enrollment and progress through the grades. Age and highest grade attained are in many ways the key explanatory variables in the multivariate models developed later. Although these variables are positively correlated with one another, this table shows that they exert opposite effects upon school enrollment. Age is negatively associated with enrollment while highest grade attained is positively associated.

TABLE 4.5

PERCENTAGE (%) OF ELIGIBLES ENROLLED THE ENTIRE 1977-78 SCHOOL YEAR, BY AGE AND HIGHEST GRADE ATTAINED

Age**	Highest Grade Attained, June, 1977					
	≤8	9	10	11	GED	Total
16	74.2 (633)	86.9 (976)	88.0 (541)	95.6 (68)	43.8 (32)	83.2 (2250)
17	33.2 (235)	59.7 (466)	76.9 (754)	88.0 (443)	38.9 (54)	69.0 (1952)
18	11.9 (101)	25.2 (210)	52.0 (379)	78.7 (614)	31.1 (61)	56.0 (1365)
19	6.6 (91)	9.9 (141)	20.1 (209)	55.8 (330)	28.3 (53)	31.7 (824)
Total	53.4 (1060)	66.5 (1793)	68.8 (1883)	77.1 (1455)	34.5 (200)	66.4 (6391)*

*There are 24 missing observations.
**See notes to Table 4.1.

Taken together, these variables are capable of driving enrollment propensities over almost their entire range (from 95.6 percent for achieving 16 year olds down to 6.6 percent for poorly progressing 19 year olds). The strength of the effect of each also appears to depend upon the level of the other. For instance, age exerts a stronger negative effect upon those having attained fewer than nine grades than it does upon those who have attained 11 grades.

Finally, in looking at the characteristics of those youth enrolled, the type of school program they participated in is of interest. A large majority, 71.0 percent, were in general programs. Vocational and technical programs accounted for 12.5 percent and college preparatory programs for 7.6 percent. The remaining youth were involved in commercial or business programs (4.4 percent), agricultural programs (0.1 percent), or other programs

(2.9 percent). The type of program may have had an effect on hours spent at school and effort spent on school, the topic of the next section.

4.5 Time Spent in School, 1977-78 School Year

As already mentioned, school attachment may be conceptualized as a continuum ranging from total non-enrollment to full attendance and effort. Normal progress in school, one of the objectives of Entitlement, demands enrollment, full attendance over the school year and reasonable scholastic effort. Previous sections of this chapter have examined the patterns and determinants of enrollment. The remainder is devoted to attendance and effort, measured as time allocation by those enrolled; specifically, hours in school and homework hours. One might expect great variation in the latter, and little in the former, since it is usual to speak of a "standard school day." However, as we shall see, even among eligibles enrolled all year there is a good deal of variation in the time individuals spend in school.

Table 4.6 displays the distribution of the average school hours per week separately for those youth enrolled in school all year and for those enrolled in a GED program all year. Three variables, the binary enrollment variable, hours in school, and homework hours provide a relatively complete description of time inputs to schooling.

TABLE 4.6

A DISTRIBUTION OF SCHOOL HOURS PER WEEK FOR YOUTH ENROLLED IN SCHOOL OR IN A GED PROGRAM THE ENTIRE 1977-78 SCHOOL YEAR

IN SCHOOL		IN GED PROGRAMS	
Ave. Hours Per Week	Percentage Of Youth Enrolled	Ave. Hours Per Week	Percentage Of Youth Enrolled
1-5	0.7	1-5	4.3
6-10	2.5	6-10	21.6
11-15	2.4	11-15	14.4
16-20	4.3	16-20	20.1
21-25	9.0	21-25	5.8
26-30	36.2	26-30	18.8
31-35	31.2	31-35	4.3
36-40	10.9	36-40	2.9
>40	0.3	>40	1.4
Missing	2.2	Missing	5.8
Total	100.0 (N=4,176)	Total	100.0 (N=69)

The majority of youths who were enrolled in school all year attended school from 26 to 35 hours each week. In contrast, only 23.1 percent of youths enrolled in GED programs attended classes for that number of hours each week. Most GED students (56.1 percent) spent between 6 and 20 hours each week attending their programs. While some differences between "school" enrollees and GED enrollees are apparent in Table 4.6--GED students spent fewer hours per week in school--the sample size of the GED group may be too small to provide reliable statistics.

Distributions of average school hours per week by site suggest some rather striking intersite differences in the behavior of in-school youth. Denver, with the lowest mean hours, also shows the widest distribution of hours, with only 26.5 percent of students at the mode of 25-30 hours per week in school. In Denver, 39.9 percent of youth spent less than 25 hours per week in school, a figure which drops to approximately 25 percent for Phoenix, Cincinnati, and Louisville, 15 percent for Baltimore, 10 percent for Cleveland, and almost to five percent for the Mississippi sites. At the high end, Cleveland and the Mississippi sites display almost a qualitative difference from the others, with distributions whose mode has shifted to 30-35 hours, and with roughly 70 percent or more of the students reporting that they spend more than 30 hours per week in school. It is of interest to note that this rightward shift in the hours of those enrolled moves together with a rightward shift in the percentage enrolled. Cleveland and the Mississippi sites stand out with high enrollment rates in Table 4.3 and again in average school hours. In addition, we find that to a lesser extent, but still clearly visible, Denver and Phoenix fall at the low end of school attachment.

Since Denver and Phoenix are characterized by tight labor markets and relatively high youth employment rates, while Mississippi falls at the opposite extreme, these results suggest the existence of a high elasticity of substitution between school and work among eligible youth. Of course, it is possible that these differences in hours simply reflect differences in school regulations, rather than individual choice by students. Even in this case, however, school regulations may be a response to labor market conditions. Whatever the true situation is, it is of great interest for the impact of the Entitlement demonstrations.

When the mean school hours of students is broken down by age and highest grade attained, very little difference shows among students except for those in a GED Program. GED students spent an average of 19.4 hours a week in school compared with 30.3 hours for the total sample. Also, older GED students spent less time in school than did younger ones.

Mean school hours were also examined by three basic demographic characteristics--race, sex and family situation--but no strong patterns were found. This highlights the significance of the relatively large site differences.

4.6 Time Spent on Homework

Weekly homework hours complete the measurement of time inputs to schooling. Weekly expenditure of effort on homework is normally necessary to progress in school. In addition, this measure is a good indicator of school attachment, and hence, performance, since a student can choose to do homework or not. Eligibles were asked the number of hours per week they spent on homework in school (including study periods) and away from school, and these two responses have been combined to arrive at total homework hours per week.

Table 4.7 presents a distribution of hours spent each week on homework, separately for youth enrolled in school and for youth enrolled in a GED program. Overall, about one-fourth of the youth did not do any homework. Of those who did, equal numbers spend either 1-5 hours or 6-10 hours per week in this endeavor.

TABLE 4.7

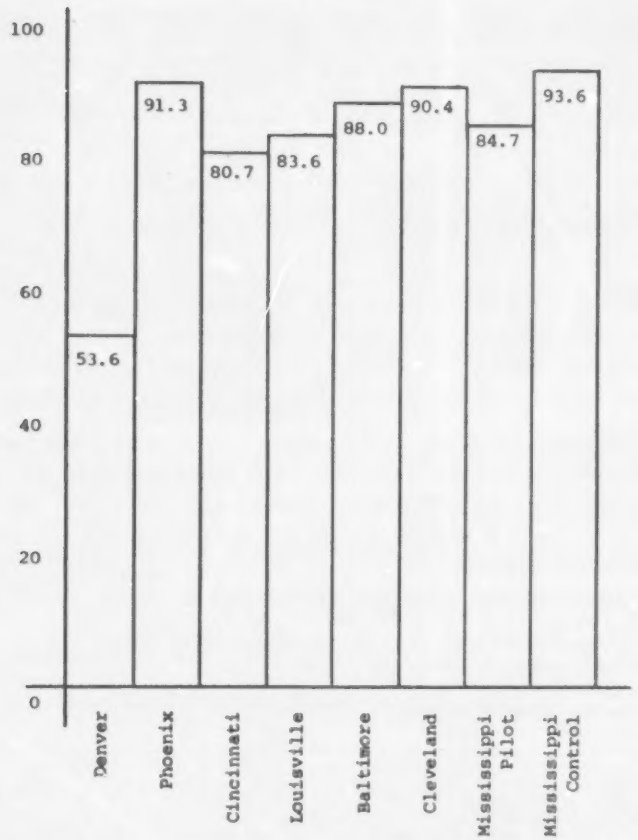
HOMEWORK HOURS PER WEEK FOR YOUTH ENROLLED THE ENTIRE SCHOOL YEAR

IN SCHOOL		IN GED PROGRAMS	
Ave. Hours Per Week	Percentage Of Youth Enrolled	Ave. Hours Per Week	Percentage Of Youth Enrolled
0	24.7	0	18.8
1-5	26.2	1-5	34.6
6-10	27.8	6-10	34.7
11-15	13.7	11-15	8.6
16-20	5.7	16-20	2.9
21-25	1.4	21-25	0.0
26-30	0.4	26-30	0.0
> 30	0.0	> 30	0.0
Total	100.0	Total	100.0
	(N=4,176)		(N=69)

Figure 4.1 shows the percentage of youth in school or in a GED program who did at least some homework, by site.

Figure 4.1

PERCENTAGE(S) WHO SPENT 1 HOUR OR MORE EACH WEEK ON HOMEWORK BY SITE, 1977-78 SCHOOL YEAR



Denver is very different from all the other sites. In each of the others, more than 80 percent of in-school youth did at least some homework. The comparable figure for Denver is only 53.6 percent. This is in keeping with the low school attachment already observed for Denver, but it requires further explanation. It is not known whether less homework is in fact assigned in Denver, although this may be the case since more students attended alternative public schools (10.5 percent) in this site than in any other. Nevertheless, it is difficult to see this accounting for the 30 percentage point disparity between Denver and the other sites. A further point. Despite the high school attachment previously found for Mississippi eligibles, neither of these two Mississippi sites stands out from Figure 4.1.

Table 4.8 presents the average amount of time students spent on homework (including "0" responses) by age and highest grade attained. Younger

TABLE 4.8

MEAN* HOMEWORK HOURS PER WEEK BY AGE AND HIGHEST GRADE ATTAINED FOR YOUTHS ENROLLED THE ENTIRE 1977-78 SCHOOL YEAR

	≤8	9	10	11	GED	Total
16	8.5 (470)	9.3 (848)	9.2 (476)	4.3 (65)	8.5 (14)	8.9 (1873)
17	7.2 (78)	8.0 (278)	9.5 (580)	8.6 (390)	5.7 (21)	8.7 (1347)
18	4.5 (12)	6.9 (53)	8.8 (197)	8.9 (483)	7.4 (19)	8.6 (764)
19	0.5 (6)	5.8 (14)	8.1 (42)	7.7 (184)	6.7 (15)	7.4 (261)
Total	8.1 (566)	8.8 (1193)	9.2 (1295)	8.3 (1182)	7.0 (69)	8.7 (4245)

*Means are calculated with values of zero included.

students, who have been shown to be more attached to school, spent more time than older students on homework, overall, and in each grade except 11th. Time spent each week varies slightly with grade. However, students in the modal grade for any age group usually spent the most time on homework. GED students spent the least amount of time, 7.0 hours per week, of any age or grade group.

In tables not shown, homework behavior was examined by site, ethnicity and sex. Race proved to be a stronger determinant of the propensity to spend at least some time on homework. Fully 84.5 percent of black students do some homework, compared with 78.9 percent of white students and 65 percent of Hispanic students.

As for the effects of family living arrangements, it was found that students who lived with both of their natural parents were most likely (83.9 percent) to do some homework; those who lived with their natural father only were least likely (76.9 percent) to do so. However, those students who lived with their natural father only spent, on average, more time on this activity (9.4 hours per week) than did the other students.

Work and Homework

A major policy issue concerns the determination of the combination of formal school work, school homework and market work which will be optimal from the standpoint of the postprogram progress of youths. Tradeoffs between these three activities are expected. Of the youths who attended school all year, 26.3 percent of them also worked in that year. The propensity to have done both varies widely across sites. Phoenix, Baltimore and Denver had the highest percentages of students who did both, the Mississippi pilot and control sites the lowest percentages. Percentages in Cincinnati and Louisville fell between these ranges. A display of mean homework hours for students who worked, separately by age and highest grade attained, is shown in Table 4.9. This is of interest by itself, as well as by comparison with Table 4.8.

TABLE 4.9

MEAN* HOMEWORK HOURS PER WEEK BY AGE AND HIGHEST GRADE ATTAINED FOR YOUTHS WHO WERE ENROLLED ALL YEAR, 1977-78, AND WHO WORKED AT ALL DURING THIS PERIOD

	≤8	9	10	11	GED	Total
16	8.1	9.6	9.1	4.7	17.0	9.0
	(103)	(181)	(123)	(12)	(4)	(423)
17	3.6	6.2	8.9	7.6	7.3	7.7
	(19)	(70)	(175)	(110)	(9)	(383)
18	3.0	5.9	8.0	8.4	9.2	8.1
	(3)	(17)	(57)	(157)	(9)	(243)
19	-- **	3.0	9.6	6.3	5.0	6.8
	--	(1)	(14)	(51)	(3)	(69)
Total	7.3	8.5	8.9	7.7	9.3	8.2
	(125)	(269)	(369)	(330)	(25)	(1118)

*Means are calculated with values of zero included.
**There are no observations in this cell.

The comparison shows that working students do spend less time on homework than non-working students, but that the overall average difference is quite small, one-half hour per week. No really large differences emerge when individuals are examined according to categories of age and highest grade attained. This seems to indicate that if there is a trade-off between school and work it may come at the decision to enroll in school, rather than from time inputs by those who have decided to do both.

When average homework hours of students who held a job were compared with average homework hours of students not employed, separately by race, sex, and family situation, no strong patterns were evident. Hence, while there is an inverse relationship between being employed and hours spent on homework, the effect of a job on homework is very small.

4.7 Summary

This chapter again demonstrates that the Entitlement demonstrations are well targeted on the youth sample of concern. Fully one-third of the sample can be regarded as school drop-outs. However, black youths have the highest propensity to be enrolled in school during the 1977-78 school year. Youths of Hispanic origin have the next highest school enrollment rates, while whites exhibit the lowest rates. The white enrollment propensity is fully 30 percentage points below that of blacks. Similar patterns of racial difference have been reported by studies using national samples. In addition, large variations in enrollment exist among the sites, and reflect, in part, the racial composition of the sites and, possibly, labor market conditions.

In addition, the older one is, and/or the fewer grades one has completed, the less likely one is to be enrolled the entire 1977-78 school year. The enrollment rate for 16-year olds who have completed the 11th grade is 95.6 percent, while the rate for 19-year olds who have completed 8th grade or less is only 6.6 percent. Finally, the evidence shows that family structure is a significant determinant of school enrollment. Approximately 74 percent of children living with both natural parents are enrolled in school, a rate which drops to 47 percent for children living with neither natural parent.

Among youth who are enrolled in school, the time spent is a reflection of the effort devoted to schooling and a constraint on the

ability to pursue other activities such as work. The average weekly number of hours spent in school ranges from about 28 to 34, with Denver having the lowest value and Mississippi the highest values. There is a qualitative difference between the Cleveland and the two Mississippi sites and all other sites when one compares the time spent in school; modal school attendance is about five hours higher in these three sites. Equally important, the propensity for greater enrollment in the 1977-78 school year correlates with the tendency to spend longer hours in school.

The tendency for a trade-off to exist between hours spent in school and hours spent working is evidenced by the low school and high work hours in Denver and Phoenix which have tight labor markets compared to Mississippi. This, of course, is a well known general phenomenon. School attendance and the unemployment rate are directly related.

For those both enrolled and holding a job during the 1977-78 school year, average hours spent on school homework were only slightly lower than for the sample as a whole, 8.2 compared to 8.7, respectively. However, as age increased, hours spent studying dropped. There is no obvious pattern to homework hours as grade in school increases, however. It will be interesting to observe changes in these patterns as the Entitlement demonstrations offer greater work opportunities to 16- and 17-year olds, the largest age groups in the sample.

5.0 WORK EXPERIENCE AND TIME INPUTS TO WORKING

5.1 Introduction and Overview

This chapter examines the preprogram work experience of the sample and draws upon the employment history collected in the baseline questionnaire to summarize information on the number of jobs held, employment/population ratios, hours of work, and wage rates and their determinants from January 1977 to time of interview in late Spring 1978. Relatively gross effects are reported here. In contrast, Chapter 6 reports net determinants of summer employment and school-year employment within a framework which permits these effects to be determined jointly with one another and with school enrollment. Similar models of wage rates and hours worked as well as of labor force participation and job search await future investigation.

This chapter begins by describing the extent to which the total quantity of labor supplied to the market differs according to the demographic, family background, and school status characteristics of youth. This is a work experience summary, and makes no claim to identify the price/quantity relation underlying labor supply curves. However, on the assumption that most youth unemployment is involuntary, this analysis does begin to identify the groups likely to be most responsive to the Entitlement job offer.

Following the examination of total labor supplied, we describe the demand side of the youth labor market, tabulating the jobs held by youth according to site, public vs. private sector, and the average hours per week involved. These results permit us to offer a preliminary assessment of the way Entitlement jobs fit into the pre-existing structure of employment, and thus begin to characterize the extent to which job creation under this program fills an existing need.

The remainder of this chapter focuses on the wage rates earned by eligibles. Variation of these by personal characteristics, by sector and site cast light upon which individuals in the sample will find the Entitlement offer of a minimum wage job most appealing. Examination of the joint distribution of hours and wage rates shows how the Entitlement offer of minimum wage employment, full-time during the summer and part-time

during the school-year, fits into the pre-existing structure of labor demand. And, studying over-time change in these relationships affords a view of the consequences of a changing minimum wage.

The Data and the Variables

Our basic data source is a series of questions youths were asked concerning jobs they held during the period from January 1, 1977 to time of baseline interview. Starting and ending dates were recorded for each job, as well as information concerning the nature of the job, hours worked, and the wage rate received. A maximum of five distinct jobs was recorded for any individual.

As Table 5.1 shows, 42.2 percent of the sample held no job at all during this period, with most of the remainder experiencing only one or two work periods. Certainly, very little information has been lost by restricting attention to no more than five jobs per youth.

TABLE 5.1

NUMBER OF WORK PERIODS FROM
JANUARY 1, 1977 - DATE OF INTERVIEW

0	42.2
1	37.4
2	14.8
3	4.2
4	1.0
5	0.5
	100.0
	(N=6,415)

In order to use these data to distinguish summer from school-year employment, as well as to study patterns of over-time change, four dummy variables have been created from this information, one each for whether or not an individual was employed at all during Spring, 1977, Summer, 1977, Fall, 1977 and Spring, 1978. These, and similarly defined variables for

average hours per week and wage rates during each of these periods are used to summarize employment/population ratios, levels of total labor supplied, and the structure of labor demand. However, labor force participation rates and employment rates calculated on a labor force participation basis are not reported, and our results are for periods of several months rather than one particular week. Thus, the statistics we report are not directly comparable to those of studies which calculate youth unemployment rates and use data such as that collected by the Current Population Survey. This is the result of a deliberate choice. We feel that because of the difficulty of accurately measuring whether or not a youth is "looking for work," employment/population ratios are more reliable than labor force participation rates, and we use periods of several months rather than one week in order to fully summarize the work experience of the sample while focusing on the likely consequences of a program with both a summer and a school-year component.[1]

5.2 Determinants of Variation in Total Labor Supplied to the Market

Labor supply is usually measured in terms of hours worked, and it is common to conceive of the market supply curve as the sum of individual supply curves, with those not in the market[2] contributing zero hours to the overall sum. In keeping with these conventions, this section uses a two-step procedure to summarize inter-group differences in the quantity of labor supplied.[3]

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[1] A report provided at a future date will, however, array data so as to provide comparability with CPS-based studies.

[2] Reasons for being out of the labor market include refusal of a too-low wage offer or involuntary unemployment (failure to find any job at all).

[3] As previously noted, we make no attempt here to identify the price/quantity relation underlying labor supply curves. Rather, we report variation in total labor supplied, a quantity which is the result of supply/demand interaction.

First, for each group, the percentage of the sample at work during each time period is reported.[1] Second, overall average hours per week employed are shown by group during each time period, with zeros averaged in. The first of these describes the propensity to be employed at all, an outcome of behavioral interest in its own right. Of greater importance, however, is the second, a summary measure of total labor supplied by the group. The two approaches provide an intermediate outcome measure, "employed at all," and a final outcome measure, "overall average hours per week." Comparisons can also be made across sample subgroups and over time.

Differences by Sex and Race

Table 5.2 displays, separately by sex and race, the percentage of the sample who were employed during each of the four time periods. We find 14.9 percent employed during Spring, 1977; 41.1 percent employed during the summer; 27.5 percent employed during the succeeding fall and 27.8 percent employed during Spring, 1978. Thus, although summer jobs are the most frequent source of youth work experience, very significant proportions of the sample have held jobs during the school year. The doubling of employment during successive school years is at least partly due to the effects of aging, an issue to which we shall return. However, one aspect of these results deserves further comment here - the failure of employment to rise significantly between Fall, 1977 and Spring, 1978. One might expect such an increase simply as a consequence of aging. That it did not occur, could be due to the increased federal minimum wage which went into effect January 1, 1978.[2] Since a further increase occurred during program operation, on January 1, 1979, and will occur again January 1, 1980 and 1981, the employment effects of these provisions will continue to be a subject in future reports.

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[1] All calculations are provided separately for each of the four time periods, spring, 1977 - spring, 1978.

[2] A number of studies have found evidence for the disemployment effects of minimum wages. See, for example, Welch and Cunningham, 1978. Note, however, that the above employment behavior reflects seasonal elements (the employment upturn typical of November and December, followed by a downturn after the first of the year) for which we have no control.

TABLE 5.2

PERCENTAGE (%) EMPLOYED BY SEX AND RACE

		Male			Female			"Other"	
		White	Black	Hispanic	White	Black	Hispanic	Races	Total
Spring, 1977	No	64.8	86.0	72.3	79.7	93.0	80.5	79.4	85.1
	Yes	35.2	14.0	27.7	20.3	7.0	19.5	20.6	14.9
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
									(6,415)
Summer, 1977	No	44.0	53.1	38.3	66.4	70.1	50.7	61.7	58.9
	Yes	56.0	46.9	61.7	33.6	29.9	49.3	38.3	41.1
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
									(6,415)
Fall, 1977	No	52.3	71.4	50.9	69.7	83.1	66.6	69.2	72.5
	Yes	47.7	28.6	49.1	30.3	16.9	33.4	30.8	27.5
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
									(6,415)
Spring, 1978	No	48.9	73.5	50.7	68.0	80.9	68.8	75.7	72.2
	Yes	51.1	26.5	49.3	32.0	19.1	31.2	24.3	27.8
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
									(6,415)

Joint tabulations of these employment variables show that, among those with some work experience, the most frequent pattern is to have worked only during the summer. The next most frequent pattern is to have worked only during the 1977-78 school year or during both the summer and the 1977-78 school year. Only 8.9 percent of the sample worked during all periods. Further results on these overtime patterns are provided in Chapter 6.

Looking within race/sex groups, summer employment rates are the highest in every case, and those during Spring, 1977, are the lowest. However, these patterns are imposed upon very significant mean inter-group differences. Whites and Hispanics have higher employment rates than blacks, and males have higher rates than females. For each sex, the white and Hispanic rates are generally comparable.[1] Overall, white males have the best employment prospects, and black females the worst. To the extent that low employment/population ratios reflect involuntary unemployment rather than different desires to work, the greatest demand for Entitlement might be expected among blacks and women.

Table 5.3 reports average labor supplied per person per week, thus providing a final outcome measure for the examination of differences by race and sex. Overall, eligible youth average 4.4 hours per week during Spring, 1977; 12.4 hours per week during the summer; 8.0 hours per week during the fall; and 7.2 hours per week during Spring, 1978. The 0.4 percentage point increase in employment rates from Fall, 1977 to Spring, 1978 is here accompanied by a drop of 0.8 hour per week, overall. Accordingly, average hours worked by those at work declined by even more than this. Once again, minimum wage changes may explain the effect, an interpretation which is lent support by the observation that such effects have previously been found to be strongest among minorities and other disadvantaged groups in the labor force. Table 5.3 shows that between Fall, 1977 and Spring, 1978, labor supplied by white males and females increased; labor supplied by all other groups declined substantially.

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[1] This result is partly due to the overstatement of Hispanic employment rates as a result of the concentration of this group in Denver and Phoenix, the high employment sites. (See the multivariate analysis - Chapter 6 and the Appendices - for further discussion.)

TABLE 5.3

MEAN EMPLOYMENT HOURS PER WEEK
BY SEX AND RACE*

	Male			Female			"Other"	
	White	Black	Hispanic	White	Black	Hispanic	Races	Total
Spring, 1977	11.5 (17.9)	3.9 (11.1)	8.8 (16.2)	6.3 (13.7)	1.9 (7.7)	5.8 (13.2)	6.6 (14.6)	4.4 (11.9) 6,415
Summer, 1977	18.5 (19.7)	13.8 (16.8)	20.3 (18.6)	9.9 (15.8)	8.7 (14.7)	15.4 (17.8)	12.6 (18.3)	12.4 (16.8) 6,415
Fall, 1977	15.0 (18.8)	8.1 (14.6)	15.7 (18.2)	8.8 (14.9)	4.6 (11.5)	9.7 (15.4)	9.3 (15.6)	8.0 (14.7) 6,415
Spring, 1978	16.2 (19.3)	6.6 (12.9)	14.8 (17.3)	9.4 (15.6)	3.8 (9.2)	8.7 (14.6)	7.0 (14.5)	7.2 (13.6) 6,415

*Zero values are included. Standard derivations are in parentheses.

Other patterns in this table resemble those in the previous one. Whites and Hispanics work more hours than blacks; males work more hours than females. And black males fall well below all other male groups in the hours they supplied to the labor market during each of the four time periods.

Does the Presence of Children Account for Low Female Work Experience?

The tabulations presented in Chapter 3 reveal a high fertility level for the females within our sample. Therefore, it is appropriate to measure the extent to which this accounts for observed female employment levels. A priori, the answer is far from obvious, since the presence of children leads to potentially countervailing pressures toward working and staying out of the labor force: children may provide a need for increased family income, at the same time as they provide a reason to stay home. And for the group eligible for Entitlement, a young child usually indicates eligibility for AFDC.[1]

Table 5.4 shows that women with children are generally employed less than those without children, but these differences are not nearly

TABLE 5.4

MEAN EMPLOYMENT HOURS PER WEEK FOR FEMALE YOUTH BY PARENTAL STATUS*
at Time of Interview

	Females Who Are Parents	Females Who Are Not Parents	Total
Spring, 1977	3.4 (10.9)	2.9 (9.6)	3.1 (9.9) 3,324
Summer, 1977	7.1 (14.4)	10.6 (15.6)	9.7 (15.4) 3,324
Fall, 1977	5.1 (12.8)	6.2 (12.8)	5.9 (12.8) 3,324
Spring, 1978	4.5 (11.2)	5.6 (11.5)	5.3 (11.4) 3,324

*Zero values are included. Standard deviations are in parentheses.

[1] In addition, those who have a child no doubt differ systematically from those who do not. Some of these differences are correlated with labor force behavior.

large enough to explain the overall male/female differences of Table 5.3, since the difference here is only 1.1 percentage points. Of course, correlated variables may be masking the true effect, a possibility which awaits future exploration with multivariate techniques.

The Effects of Household Living Arrangements

Youths who have started their own households, or who, for other reasons are not living with a parent or guardian, define a group which can be expected to be more attached to work and less attached to school than is usually the case. This is confirmed by Table 5.5, where we observe rather strong differences in total labor supplied by these groups. These differences are, in general, larger than those shown in the previous tables, although it is interesting to note that they are significantly more pronounced during the school year than during the summer.

TABLE 5.5

MEAN EMPLOYMENT HOURS PER WEEK BY FAMILY LIVING ARRANGEMENT*

	Living With Parents or Guardian		
	Yes	No	Total
Spring, 1977	4.0 (11.3)	8.3 (16.0)	4.4 (11.9) 6,415
Summer, 1977	12.3 (16.7)	13.3 (18.1)	12.4 (16.8) 6,415
Fall, 1977	7.6 (14.3)	12.2 (17.7)	8.0 (14.7) 6,415
Spring, 1978	6.8 (13.1)	10.6 (17.3)	7.2 (13.6) 6,415

*Zero values are included; Standard deviations are in parentheses.

The Effects of Age and of Overtime Change

The effects of aging on the employment of program eligibles is an important issue, and the comparison of earlier rates for older age groups with current rates for younger age groups promises to throw light on recently occurring changes in youth labor markets. Yet inferences from these exercises must be advanced cautiously, since, as we have already noted, 18- or 19-year olds are not fully representative of their birth cohorts.

Table 5.6 shows the percent employed, separately by time period, for each of four age groups (defined according to age at time of interview in Spring, 1978). Not surprisingly, older youth generally exhibit higher employment rates than younger individuals, although 19-year olds occasionally violate this pattern. (This is probably due to the sample truncation by age.)

TABLE 5.6

PERCENTAGE EMPLOYED BY AGE

		Age in Spring, 1978				
		16	17	18	19	Total
Spring, 1977	No	91.1	86.7	79.0	75.5	85.1
	Yes	8.9	13.3	21.0	24.5	14.9
		100.0	100.0	100.0	100.0	100.0
						(6415)
Summer, 1977	No	64.7	57.0	53.3	56.9	58.9
	Yes	35.3	43.0	46.7	43.1	41.1
		100.0	100.0	100.0	100.0	100.0
						(6415)
Fall, 1977	No	81.0	73.2	64.0	62.0	72.5
	Yes	19.0	26.8	36.0	38.0	27.5
		100.0	100.0	100.0	100.0	100.0
						(6415)
Spring, 1978	No	78.4	72.2	65.8	66.2	72.2
	Yes	21.6	27.8	34.2	33.8	27.8
		100.0	100.0	100.0	100.0	100.0
						(6415)

Continuing with the effects of age, table 5.7 shows average employment hours per week, separately by age group. Here we have a final summary measure of labor supplied and, not surprisingly, we find once again that older youth generally supply more labor to the market than younger individuals, with the age gradient appearing to be somewhat steeper during the school year than during the summer. Continuing to read across rows in this table, we find more rapid rise in employment as one moves from 16-to 17-year olds and from 17-to 18-year olds, by comparison with the 18 to 19 transition, a result corroborating that of Table 5.6.

A look down the columns of this table suggests that elevated summer employment rates exert at least as great an effect as aging within the sample. As for secular change, a comparison of Spring, 1978 employment for the 16-year old group with Spring, 1977 employment for those aged 16 at that time yields values of 4.4 percent in the former case; 3.8 percent in the

TABLE 5.7

MEAN EMPLOYMENT HOURS PER WEEK BY AGE*

	Age in Spring, 1978				
	16	17	18	19	Total
Spring, 1977	2.0 (7.7)	3.8 (11.1)	6.6 (14.2)	8.6 (16.4)	4.4 (11.9) 6,415
Summer, 1977	9.8 (15.1)	12.9 (16.8)	14.8 (17.6)	14.6 (18.7)	12.4 (16.8) 6,415
Fall, 1977	4.7 (11.2)	7.6 (14.3)	11.0 (16.5)	12.9 (18.1)	8.0 (14.7) 6,415
Spring, 1978	4.4 (10.1)	7.0 (13.2)	9.7 (15.6)	10.8 (17.1)	7.2 (13.6) 6,415

*Includes zero values; Standard deviations are in parentheses.

latter. Thus, if conditions have changed over this period, the change has been small. (And the 0.6 percentage point difference could be due to recall error.) Similar calculations for the 17- and 18-year old groups continue to show small increments associated with the later point-in-time, but increments of such a magnitude as to be easily explained away by measurement error or bias due to sample truncation by age.

The Effects of School Enrollment and Progress in School

During the school year, individuals must commonly make a decision regarding the allocation of their time among school and work, viewed as competing activities.[1] Since time is limited, one would expect to find that in-school youth supply less labor to the market than out-of-school youth. This result is strongly confirmed by Table 5.8.

TABLE 5.8

MEAN EMPLOYMENT HOURS BY SCHOOL AND GED ENROLLMENT*

	Enrolled All Year	Not Enrolled All Year	Total
Spring, 1977	3.0 (9.6)	9.4 (17.0)	4.4 (11.9) 6,415
Fall, 1977	5.9 (12.2)	11.9 (17.9)	8.0 (14.7) 6,415
Spring, 1978	4.9 (10.3)	11.6 (17.6)	7.2 (13.6) 6,415

*Zero values are included; Standard deviations are in parentheses.

[1] The implications of this for the Entitlement demonstrations are investigated at some length in Chapter 6. For further treatment of these issues see Duncan, 1965; Ehrenberg and Marcus, 1979; Gustman and Steinmeier, 1979; Johnson, 1978; Lazear, 1977; Lerman, 1972; Maller, 1977; Parsons, 1974; Ryder, Stafford, and Stephan, 1976; Stephenson, 1977; among others.

The average quantity of labor supplied is two to three times as large for out-of-school as for in-school youth. This may be due to the limited availability of part-time jobs, but more likely reflects the likelihood that in-school youth have relatively lower levels of desire for, and time available for, job-hunting. To the extent that this is the case, we expect that many youth will refuse the Entitlement job offer because it interferes with their school-work, while others will accept the offer, but their school-work may suffer as a result. The prevalence of each of these potential outcomes will be closely studied in the intermediate and final impact analysis.

School enrollment should lead to grade completion, and thus progress toward graduation. It is hoped that one mechanism of Entitlement's impact will be a "snowball effect" whereby school enrollment becomes a habit and continued progress becomes easier as successes mount. Yet higher grade attainment may be associated with increased employability, and taken in conjunction with increased age, may lead to a greater pull out of school into the world of full-time work. Certainly this possibility is present in the results of Table 5.9.

TABLE 5.9

MEAN EMPLOYMENT HOURS PER WEEK BY HIGHEST GRADE ATTAINED*

	Highest Grade Attained, June, 1977						
	≤8	9	10	11	GED	Grade Missing	Total
Spring, 1977	4.1 (11.8)	3.6 (11.0)	4.2 (11.5)	5.5 (12.9)	6.6 (14.6)	3.1 (10.6)	4.4 (11.9) 6,415
Summer, 1978	9.6 (16.4)	10.7 (16.1)	13.0 (16.9)	15.7 (17.3)	14.2 (17.4)	3.1 (10.6)	12.4 (16.8) 6,415
Fall, 1977	6.4 (14.3)	6.4 (13.5)	8.3 (14.8)	10.4 (15.7)	10.5 (16.6)	8.3 (16.6)	8.0 (14.7) 6,415
Spring, 1978	6.3 (13.3)	6.3 (13.0)	7.6 (13.9)	8.4 (14.1)	7.8 (12.9)	2.9 (8.9)	7.2 (13.6) 6,415

*Zero values are included; Standard deviations are in parentheses.

Here we shall see a relatively regular positive association of total labor supplied with highest grade attained, with particularly strong effects for summer employment. In addition to the possibilities just mentioned, these results also suggest that youth who have progressed relatively far in high school may be better able to find a job without the aid of Entitlement. Whether they still desire the Entitlement job may thus depend upon their ability to find a job paying in excess of the minimum wage. Further evidence on this issue is provided later in this chapter.

5.3 The Demand Side

In this section we provide a first look at youth labor market demand by focusing on the sector (private vs. public) and average hours per week (1-15, 16-30, >30) which characterize the jobs held by sample members during each of the time periods. In addition, we describe inter-site variation in employment levels, variation we attribute mostly to the strength of local labor demand. The previous section was concerned with the dependence of total labor supplied on the characteristics of individuals, and relied heavily on tabulations of percentage employed, and average hours employed per person (with zeroes averaged in). By contrast, this section is concerned with the structure of demand and the characteristics of the available jobs, so that most of the tabulations are restricted to employed youth.[1] As with supply, the tabulations presented here are a preliminary reconnaissance of the territory, with no attempt to estimate the price/quantity relationships underlying labor demand curves.

Employment in the Public and Private Sector

Table 5.10 reveals that during the school year, private sector employment predominates over public sector employment, although the gap has been narrowing rapidly. During the summer, however, the two contribute almost equal shares, no doubt reflecting recent major job creation efforts for youth (SPEDY, in particular).

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[1] However, this section does report site differences in the percent employed.

TABLE 5.10

EMPLOYMENT SHARES IN THE PUBLIC AND PRIVATE SECTOR

	Private	Public	Missing	Total
Spring, 1977	80.3	18.4	1.4	100.0 (953)
Summer, 1977	52.3	46.2	1.5	100.0 (2,637)
Fall, 1977	67.4	30.2	2.4	100.0 (1,762)
Spring, 1978	62.4	35.2	2.4	100.0 (1,781)

Considering the availability of part-time vs. full-time employment, Table 5.11 shows a good deal of variation, all of it due to fluctuations within the public sector. The private sector shows a remarkably stable hours structure of employment, with roughly 15 percent very part-time (fewer than 15 hours per week), roughly one-third between part and full-time (16-30 hours per week), and roughly one-half full-time (greater than 30 hours per week). Quite noteworthy here is the stability of this distribution from school year to summer. It is surprising (and, to the best

TABLE 5.11

EMPLOYMENT HOURS PER WEEK IN THE PUBLIC AND PRIVATE SECTOR

		Private	Public	Total
Spring, 1977	1-15	15.9	42.9	21.0
	16-30	33.2	30.9	32.8
	>30	50.8	26.3	46.3
		100.0	100.0	100.0
Summer, 1977	1-15	13.8	9.7	11.9
	16-30	34.4	47.5	40.6
	>30	51.8	42.8	47.6
		100.0	100.0	100.0
Fall, 1977	1-15	15.8	26.3	19.1
	16-30	33.9	40.5	35.9
	>30	50.3	33.2	45.0
		100.0	100.0	100.0
Spring, 1978	1-15	17.8	65.7	35.1
	16-30	33.4	22.2	29.3
	>30	48.8	12.1	35.6
		100.0	100.0	100.0

*The sample is restricted to youth who worked; there are 13 missing cases.

of our knowledge, not previously reported) that the part-time/full-time composition of private sector demand is so very unresponsive to seasonal fluctuations in the availability of youthful labor.

Public sector employment is, by contrast, very responsive. Indeed, during the summer it shifts strongly toward full-time employment, whereas during the school year the movement is back toward part-time employment. In addition, during Spring, 1978, there was an extraordinarily sharp movement toward very part-time public sector employment, a development almost completely accounted for by job creation in the Baltimore site.

Site Differences

The four sites experiencing Entitlement job creation and the four control sites show reasonably diverse preprogram youth labor demand. This diversity must be understood in order to assess site differences in the relationship between the Entitlement job offer and already existing employment opportunities. In this section we look at site employment differences by sector and hours. A later section summarizes site differences in wage rate levels.

Table 5.12 shows that private sector youth labor demand is significantly stronger in Denver and Phoenix than in the other sites. In these high demand sites this sector often employs one-third of the entire sample of eligibles, and in every time period exceeds private sector performance in the remaining sites. By contrast, the private sector in Baltimore and the Mississippi pilot consistently display the weakest demand for youth labor, typically employing fewer than 10 percent of eligibles.

Inter-site variation in the number of jobs provided by the public sector shows a more complex pattern. Prior to Summer, 1977, youth employment in this sector is at an extremely low level in all sites. However, this changes during the summer, when public sector employment rises dramatically in all sites. The largest gains occur in Baltimore and Cleveland, where public sector youth employment actually exceeds that provided by the private sector. Throughout these fluctuations, the Mississippi public sector consistently provides the fewest employment opportunities.

TABLE 5.12

PRIVATE AND PUBLIC SECTOR EMPLOYMENT* PERCENTAGE BY SITE

Private Sector	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
Spring, 1977	22.2	21.5	11.3	12.2	4.7	8.2	6.8	17.3	11.9
Summer, 1977	34.7	34.3	21.3	18.5	8.8	25.6	13.9	33.2	21.5
Fall, 1977	34.7	30.7	20.6	18.1	8.6	18.4	8.3	14.3	18.5
Spring, 1978	30.2	37.6	15.4	22.0	8.6	13.2	10.0	12.7	17.3
Public Sector									
Spring, 1977	3.6	3.8	3.6	2.1	2.6	2.4	1.6	1.2	2.7
Summer, 1977	21.8	17.7	19.7	13.5	26.3	27.6	6.1	7.6	19.0
Fall, 1977	9.7	6.1	9.7	4.6	12.7	9.6	2.5	2.8	8.3
Spring, 1978	7.5	6.4	5.0	4.8	26.3	4.4	2.8	3.0	9.8
N	1008	423	1193	631	1427	539	760	434	6415

*We report the percent of those in the site who were employed in the given sector during the given time period. These numbers may fail to add to total site employment rates due to the omissions of jobs whose sector was not reported.

After the summer, public sector employment decreases, although never again to pre-summer levels. However, Baltimore is a major exception, for in this site the public sector provides jobs to 26.3 percent of the sample during Spring, 1978. This extraordinary performance keeps Baltimore youth employment rates at a reasonably high level despite the dismal performance of the Baltimore private sector.

As for inter-site variation in the hours structure of employment, Table 5.13 shows that once unusual events (such as the rise in Baltimore public sector employment during Spring, 1978) are allowed for, a relatively stable structure emerges. Thus, during the school year roughly 20 percent of youth employment is very part-time (1-15 hours per week), a figure which falls to 12 percent during the summer. Baltimore, with its reliance on the public sector, generally shows a larger-than-average concentration of such jobs, while Denver's percentage is lower than average. On the other hand, approximately 46 percent of youth jobs are full-time (greater than 30 hours per week), with these representing a relatively high share of employment in Denver, Phoenix, and the Mississippi sites, and a low share of employment in Cleveland, and, during Spring, 1978, in Baltimore. Accordingly, Entitlement job creation may be particularly important in Denver and Mississippi, where low levels of part-time employment during the school year may be significantly augmented.

5.4 Who Earns What Wage Rate?

In one view, the ultimate goal of the Entitlement demonstration is to increase both the employability and the wage rate commanded by program participants. It is therefore particularly important to gain a clear view of the level and determinants of preprogram wages. This section makes a first attempt in this direction. Mean wage rates are summarized by demographic and other characteristics of individuals. The wage rate discussed is the rate a youth received on his or her most recent job during the time period in question.[1] Means are calculated only for those holding a job, with reported wage rates in excess

[1] If a youth held two or more jobs during the summer, for example, the wage rate from the most recent job is used in the analysis.

TABLE 5.13

EMPLOYMENT HOURS PER WEEK BY SITE*

		Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
Spring, 1977	1-15	13.8	20.0	24.0	19.6	34.6	20.3	20.3	22.2	20.9
	16-30	36.9	32.7	36.1	25.0	31.7	47.5	23.4	17.3	32.6
	>30	49.2	47.3	39.9	55.4	33.7	32.2	56.3	60.5	46.5
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
										N = 953
Summer, 1977	1-15	8.0	12.3	16.4	13.6	13.8	5.8	12.3	12.9	11.9
	16-30	40.9	30.4	45.3	51.0	28.4	75.1	21.4	21.3	40.6
	>30	51.0	57.3	38.2	35.4	57.8	19.1	66.2	65.7	47.5
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
										N = 2637
Fall, 1977	1-15	13.3	19.9	21.2	23.0	22.4	18.7	15.1	27.0	19.1
	16-30	36.7	36.7	39.3	28.4	29.6	49.0	30.2	25.7	35.6
	>30	50.0	43.4	39.5	48.6	48.0	32.3	54.7	47.3	45.2
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
										N = 1762
Spring, 1978	1-15	14.2	19.9	26.4	24.4	69.3	25.8	20.0	33.8	34.8
	16-30	39.0	34.2	34.1	30.7	17.0	36.1	20.0	27.9	29.1
	>30	46.8	45.9	39.5	44.9	13.6	38.1	60.0	38.2	36.1
		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
										N = 1781

*The sample is restricted to youth who worked.

of $6.00 per hour dropped from the sample.[1] At this stage, we shall make little attempt to interpret these results. For a discussion of some of the complex issues in correctly doing so, see Griliches (1976, 1977).

Differences by Race and Sex

Table 5.14 shows that, with the exception of the summer, wage rates showed a secular upward trend, a result at least partly due to the aging of the sample. Mean wages rose from $2.39 per hour during Spring, 1977 to $2.54 per hour one year later. The sharpest increase was experienced by white males, the narrowest by Hispanic males, but the upward trend was in evidence for all groups.

In every case we find males earning more than females, and, in general, Hispanics earning more than whites, and whites earning more than blacks. The Hispanic wage advantage over whites is at least partly due to their concentration in Phoenix and Denver, the high wage sites.[2]

Differences by Age Group

Table 5.15 shows that at each point in time wage rates exhibit a significantly positive age gradient. Comparing wage rates for 16-year olds in Spring, 1978, with rates for those who were 16 in Spring, 1977 suggests that the wage level rose by an average of $0.13 per hour over this period. And further confirmation is provided by a similar comparison for 17-year olds.[3]

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[1] This is done in order to provide a robust measure of central tendency for inter-group comparison. In our data, outliers are few, but they could skew the results if not removed.

[2] Evidence that these are relatively high wage sites is that during Summer, 1977, average wage rates in these sites were $2.42 and $2.45, respectively, whereas averages in the other sites varied from $2.36 to $2.18. See Appendix Tables E5.1 to E5.6 for further information.

[3] These age groups provide more reliable comparisons than 18-year olds, who are subject to much greater sample truncation.

TABLE 5.14

MEAN HOURLY WAGES BY SEX AND RACE*

	Male			Female				
	White	Black	Hispanic	White	Black	Hispanic	"Other" Races	Total
Spring, 1977	2.32 (0.92)**	2.45 (0.87)	2.68 (0.97)	2.18 (0.89)	2.26 (0.96)	2.50 (0.61)	2.56 (0.94)	2.39 (0.90)
							N =	934
Summer, 1977	2.40 (0.85)	2.34 (0.72)	2.48 (0.86)	2.16 (0.87)	2.28 (0.70)	2.38 (0.54)	2.56 (0.87)	2.34 (0.75)
							N =	2594
Fall, 1977	2.54 (0.86)	2.46 (0.80)	2.63 (0.83)	2.23 (0.84)	2.32 (0.79)	2.46 (0.74)	2.58 (0.46)	2.44 (0.81)
							N =	1727
Spring, 1978	2.60 (0.86)	2.58 (0.76)	2.73 (0.84)	2.28 (0.76)	2.44 (0.78)	2.67 (0.77)	2.73 (0.48)	2.54 (0.80)
							N =	1739

* The sample is restricted to employed youth.
** Standard deviations are in parentheses.

TABLE 5.15

MEAN HOURLY WAGES BY AGE*

	Age in Spring, 1978				
	16	17	18	19	Total
Spring, 1977	2.25 (1.02)**	2.34 (0.92)	2.40 (0.73)	2.59 (0.90)	2.39 (0.90)
					N = 934
Summer, 1977	2.25 (0.76)	2.32 (0.74)	2.39 (0.70)	2.52 (0.80)	2.34 (0.75)
					N = 2594
Fall, 1977	2.33 (0.87)	2.43 (0.79)	2.45 (0.75)	2.60 (0.84)	2.44 (0.81)
					N = 1727
Spring, 1978	2.47 (0.79)	2.54 (0.78)	2.60 (0.79)	2.59 (0.83)	2.54 (0.80)
					N = 1739

* The sample is restricted to employed youth.
** Standard deviations are in parentheses.

Differences by School Enrollment and Grade Attainment

Lazear (1977) presents evidence of "schooling as a wage depressant." In-school youth, because they must work part-time, command a lower wage than out-of-school youth. Table 5.16 corroborates this result for our sample. However, inter-group mean differences are small,

TABLE 5.16

MEAN HOURLY WAGE BY SCHOOL ENROLLMENT*

	Enrolled All Year	Not Enrolled All Year	Total
Spring, 1977	2.33 (0.91)**	2.49 (0.88)	2.39 (0.90)
			N = 934
Fall, 1977	2.38 (0.76)	2.53 (0.96)	2.44 (0.81)
			N= 1727
Spring, 1978	2.53 (0.74)	2.57 (0.86)	2.54 (0.80)
			N= 1739

* The sample is restricted to employed youth.
** Standard deviations are in parentheses.

varying from $0.16 per hour to $0.04 per hour. (These differences may become larger when other characteristics of these youth are held constant.)

The usual human capital accumulation theory of wage rate determination points toward highest grade attained as one of the key variables for the prediction of wage rates within our sample. Table 5.17 supports this view, and in addition sheds light on the earning capacity of individuals making less than regular progress in school: those who had completed fewer than nine school grades and those enrolled in a GED program.

We first notice that among those who had attained 9th, 10th, or 11th grade by June, 1977, grade attainment is associated with an upward wage trajectory, rising by at least $0.10 per grade during the school year, slightly less during the summer. And second, we find that those who had completed fewer than 9 grades or are enrolled in a GED program generally earn more than those who had completed 9th grade, but less than the others. This is probably due to a variety of compensating factors, with age, work attachment and experience, and current school enrollment figuring prominently. Of course, earnings functions are best estimated in a multivariate context. This will be one of the goals of future work.

TABLE 5.17

MEAN HOURLY WAGE BY HIGHEST GRADE ATTAINED*

	≤ 8	9	10	11	GED	Grade Missing	Total
Spring, 1977	$2.32 (0.90)**	2.20 (0.98)	2.45 (0.84)	2.54 (0.87)	2.37 (0.96)	2.65 (0.14)	2.39 (0.90) 934
Summer, 1977	2.34 (0.79)	2.26 (0.83)	2.34 (0.69)	2.40 (0.72)	2.30 (0.83)	2.65 (0.14)	2.34 (0.75) 2594
Fall, 1977	2.44 (0.83)	2.32 (0.87)	2.46 (0.77)	2.53 (0.78)	2.29 (0.86)	2.39 (0.76)	2.44 (0.81) 1727
Spring, 1978	2.48 (0.89)	2.47 (0.84)	2.53 (0.78)	2.67 (0.72)	2.50 (0.66)	2.32 (0.58)	2.54 (0.80) 1739

*The sample is restricted to employed youth.

5.5 Minimum Wages, the Distribution of Observed Wages, and the Structure of Labor Demand

The Entitlement demonstrations offer minimum wage jobs to all eligibles. They can therefore be viewed as a labor market intervention creating two "sectors": one in which employment is assured but the wage rate is fixed at the minimum, the other in which job search may lead only to unemployment, but could possibly yield a higher than minimum-wage job. In this situation it is to be expected that the majority of eligibles who had previously been earning less than the minimum wage will enroll in the program, while many of the others will search outside the program for a job offering higher pay. This latter group may also experience some alteration in the wage they can command as a result of changing supply associated with outflow from their "sector" and into the program.[1]

As a further complication, the minimum wage has been changing, from $2.30 per hour prior to January 1, 1978 to $2.65 per hour at that date, and to $2.90 per hour on January 1, 1979. It will rise to $3.10 per hour on January 1, 1980, and to $3.35 per hour on January 1, 1981. In light of these considerations, it is of great interest to examine the distribution of wage rates earned by eligibles in the preprogram period, and to see how these vary according to characteristics of individuals and jobs.

Three points stand out in Table 5.18. The first is that many youth work at or below the federal minimum wage.[2] During Spring, 1977, 43.5 percent of working youth in the sample did so. This figure rose to 52.2 percent during the summer, and then fell to 38.5 percent during the fall. After the minimum rose to $2.65 per hour on January 1, 1978, fully 70 percent of the sample reported working for wages at or below this level.

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[1] For extensive discussion of a similar two-sector model see Mincer, 1976.

[2] Similar results are reported by Flaim and Ryscavage, 1978.

TABLE 5.18

WAGE RATE DISTRIBUTIONS FOR EMPLOYED YOUTH

	≤$2.30/hr.	$2.31-$2.65/hr.	$2.66-$2.90/hr.	>$2.90/hr.	Total	N
Spring, 1977	43.5	28.3	7.7	20.5	100	953
Summer, 1977	52.2	28.6	5.0	14.1	100	2637
Fall, 1977	38.5	33.7	8.9	18.8	100	1762
Spring, 1978	22.1	47.9	11.7	18.2	100	1781

The second point is that youth work for lower wage rates during the summer than during the school year. This is no doubt a consequence of the increased supply (outward shift in the supply curve) of youth during the summer, but it reminds us once again of the importance of analyzing summer and school year behavior separately. And it argues that, for eligible youth, the most attractive feature of the Entitlement package may be a summer, full-time, minimum wage job.[1]

The third point is that although 70 percent of the sample reported working at or below the federal minimum wage after it rose to $2.65 per hour on January 1, 1978, this rise may have led to an increase in the wage level. Thus, the percentage of youth earning at or below $2.30 per hour declined from 38.5 to 22.1, while the percentage earning $2.31 - $2.65 per hour rose from 33.7 to 47.9.

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[1] The importance of summer/school-year differences in wage offers could fruitfully be pursued further. Parsons (1974) and Lazear (1977) argue that part-time jobs pay less than full-time jobs, and Ehrenberg and Marcus (1979) make this a key feature of their model of the effects of minimum wages. Yet we find that summer jobs pay less per hour than jobs during the school year, even though a higher percentage of summer jobs are full-time. Thus it appears that seasonal supply-side shifts exert a more powerful effect on wage rates than do demand-side considerations such as whether part-time or full-time employment is being offered. We will examine these issues more closely in future reports.

With the minimum wage rising once again on January 1, 1979, during the operation of Entitlement, we will have the opportunity to see whether the presence of a minimum wage employer of last resort affects the speed of adjustment to, or the extent of compliance with, the new federal regulations. An important policy issue is implicit here: if one is at all concerned with possible youth disemployment effects of rising minimum wages, a public sector, minimum wage employer of last resort could be an attractive adjunct to national youth wage rate legislation. Such an employer or last resort might provide two benefits. First, youth whose jobs were abolished because of employer resistance to a wage hike would not be unemployed. And second, a new mechanism to ensure compliance with federal minimum wage standards would be introduced into the youth labor market. Indeed, this is a potentially important and positive side effect of Entitlement: by guaranteeing a minimum wage job to all eligibles, the program brings powerful market pressure to bear upon any employer who seeks to hire at a wage rate below the federal minimum. Rather than requiring young workers to voice their complaints about low wages, at risk of job security, workers could simply exit in order to take an Entitlement minimum wage job.[1] In this situation, it is difficult to see how lower-than-minimum wages could long endure.

Wage Rates for Part-Time and Full-Time Employment in the Private and the Public Sector

Table 5.19 shows that, in general, the private sector has provided both more jobs, and jobs at higher wages, than the public sector. Thus, whereas roughly 60-70 percent of private sector jobs have paid less than $2.66 per hour, the comparable figure for the public sector has been well in excess of 70 percent. In addition, while more than 20 percent of private sector jobs have paid in excess of $2.90 per hour, the comparable figure for the public sector is only about 10 percent. Both sectors show a decline in wage rates

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[1] For use of the exit-voice paradigm in a slightly different context, see Freeman, 1978.

during the summer, and both show a secular trend away from the lowest wage category. This latter trend is doubtless due to increases in the federal minimum wage as well as to the effects of aging within our sample.

TABLE 5.19

WAGE RATE DISTRIBUTIONS BY SECTOR

	≤$2.30/hr.	$2.31-$2.65/hr.	$2.66-$2.90/hr.	>$2.90/hr.	Total	N
			Private Sector			
Spring, 1977	43.8	26.5	8.2	21.4	100	765
Summer, 1977	45.3	26.8	6.7	21.2	100	1379
Fall, 1977	35.1	31.0	10.2	23.7	100	1187
Spring, 1978	25.4	38.1	13.8	22.8	100	1111
			Public Sector			
Spring, 1977	41.7	36.0	5.1	17.1	100	175
Summer, 1977	60.2	30.5	3.0	6.3	100	1218
Fall, 1977	46.2	39.6	5.6	8.6	100	533
Spring, 1978	16.4	66.5	6.7	10.4	100	627

The public sector wage distribution shows the most dramatic shift away from the $2.30 per hour and below category after January 1, 1978, but the fact that 83 percent of these jobs were still at our below the federal minimum at that time deserves some comment. To begin with, it must be recognized that these jobs represent a mix of federal, state and local employment, not all of which are subject to the same regulations. In addition, state minimum wage laws cross-cut the federal minimum. Their provisions vary, but they are in general lower than the federal minimum, and the jurisdictional issue in any particular case can be a complex legal matter. During Fall, 1977, when the federal minimum was $2.30 per hour, the state minimum for Baltimore, Maryland was also $2.30, but those for Cleveland and Cincinnati, Ohio were $2.10; for Denver, Colorado, $1.90; for Louisville, Kentucky, $1.60; and Phoenix, Arizona and Mississippi had no state minima.

As for part-time/full-time wage differences, Tables 5.20 and 5.21 show these for the private and public sector, respectively. In order to simplify the presentation, we have focused on comparing very part-time employment (fewer than 15 hours per week) with full-time employment (more than 30 hours per week).

Table 5.20 reveals that within the private sector, full-time jobs generally provide higher wage rates than part-time jobs. Thus, during each time period the full-time wage rate distribution is shifted to the right of that for part-time jobs, exhibiting a lower percentage at or below $2.30 per hour and a higher percentage above $2.65 per hour. This result fails to hold for the public sector, as shown in Table 5.21. In this table we see that during every time period, full-time public sector employment shows a higher percentage earning at or below $2.30 per hour than is the case for part-time public employment. However, results here are irregular, partly as a result of small sample sizes, and partly due to the appearance of an unusually large number of full-time, low-wage, public-sector summer jobs, no doubt mostly due to programs such

TABLE 5.20

PRIVATE SECTOR WAGE RATE DISTRIBUTIONS:
PART-TIME VS. FULL-TIME JOBS

	≤$2.30/hr.	$2.31-$2.65/hr.	$2.66-$2.90/hr.	>$2.90/hr.	Total	N
			Part-Time Jobs (1-15 hrs per week)			
Spring, 1977	47.5	24.6	5.7	22.1	100	122
Summer, 1977	48.4	20.0	4.7	26.8	100	190
Fall, 1977	40.4	27.7	7.4	24.5	100	188
Spring, 1978	32.8	37.4	8.1	21.7	100	198
			Full-Time Jobs (>30 hrs per week)			
Spring, 1977	40.1	27.8	7.5	24.7	100	389
Summer, 1977	39.8	29.0	7.3	23.9	100	714
Fall, 1977	32.3	28.8	10.9	28.0	100	597
Spring, 1978	21.8	33.4	16.2	28.6	100	542

as SPEDY. The existence of this, and related programs prior to, concurrent with, and occasionally in competition with, Entitlement, raises evaluation issues which we shall address in future reports.

TABLE 5.21

PUBLIC SECTOR WAGE RATE DISTRIBUTIONS:
PART-TIME VS. FULL-TIME JOBS

	≤$2.30/hr.	$2.31-$2.65/hr.	$2.66-$2.90/hr.	>$2.90/hr.	Total	N
			Part-Time Jobs (1-15 hrs per week)			
Spring, 1977	34.7	48.0	6.7	10.7	100	75
Summer, 1977	33.1	40.7	5.1	21.2	100	118
Fall, 1977	25.0	55.0	6.4	13.6	100	140
Spring, 1978	10.9	75.5	4.9	8.7	100	412
			Full-Time Jobs (>30 hrs per week)			
Spring, 1977	43.5	19.6	6.5	30.4	100	46
Summer, 1977	61.2	30.9	3.1	4.8	100	521
Fall, 1977	49.2	37.9	5.1	7.9	100	177
Spring, 1978	23.7	46.1	9.2	21.1	100	76

5.6 Wage Rate and Hours in the Private and Public Sectors

As a final summary view of the jobs available to eligibles in the preprogram period, this section describes the joint distribution of hours and wage rates, separately by sector. Since Entitlement first became fully operational in all pilot sites during Summer, 1978, we have focused here on the summer and fall of the previous year. In this way we provide for a discussion of the likely impact of Entitlement on the existing structure of employment while at the same time keeping the number of tables to be scrutinized to a minimum.

Table 5.22 shows the distribution of hours and wage rates in the private and public sectors during Summer, 1977. This table is percentaged so that the figures within its body add to 100, as well

as adding across rows or down columns to yield the figures in the margins of the table. For example, we see in the first panel that 6.7 percent of private sector workers held very part-time jobs at or below the minimum wage; overall, 6.7 + 18.0 + 20.6 = 45.3 percent of private sector workers were at or below the minimum wage.

Table 5.22 Wage Rates and Hours by Sector, Summer, 1977

Private Sector

		Hours/Week			
		1-15	16-30	> 30	
Wage Rate	≤ $2.30	6.7	18.0	20.6	45.3
	$2.31-$2.90	3.5	11.4	18.8	33.5
	> $2.90	3.7	5.1	12.4	21.2
		13.8	34.4	51.8	100.0

Public Sector

		Hours/Week			
		1-15	16-30	> 30	
Wage Rate	≤ $2.30	3.2	30.8	26.2	60.2
	$2.31-$2.90	4.4	14.5	14.5	33.5
	> $2.90	2.1	2.2	2.1	6.3
		9.7	47.5	42.8	100.0

The first results to be observed in this table are that private sector summer jobs are most often full-time (51.8 percent) and low wage (45.3 percent), and that these conditions in combination characterize 20.6 percent of the total. Almost equally common are full-time jobs paying a slightly higher wage (18.8 percent) and slightly less than full-time jobs paying a low wage (18.0 percent). Rather uncommon (3.7 percent) are part-time jobs paying a high wage. By comparison, public sector jobs are more concentrated at low wage rates, and less likely to be full-time than was the case for the private sector. One consequence is that only 2.1 percent of public

sector jobs are full-time and high wage, compared with 12.4 percent of private sector jobs. Thus, in general contrast to the private sector, the public sector job distribution is shifted away from desirable jobs toward less desirable jobs (as defined by lower wage rates and hours). Entitlement, by increasing the number of public sector, low-wage, full-time summer jobs, will not alter this situation. The private sector will still be the place to search if one is looking for more than the minimum wage. Yet despite its generally minimum wage, the summer Entitlement job has the virtue of being full-time. On the assumption that during the summer, jobs are judged according to the total income flow they yield, the full time nature of Entitlement jobs may significantly increase their attractiveness. From this perspective, they are certainly preferable to the 24.7 percent of private sector jobs and the 34 percent of public sector jobs which are both low-wage and part-time. And they will also be attractive to many of the youth who have previously been unable to find any job.

Table 5.23 presents similar tabulations for Fall, 1977. We find that the hours structure of private sector jobs is unchanged from the summer, but private sector wage rates have shifted upward slightly. By contrast, the public sector shows a substantial shift toward part-time jobs, also accompanied by a rise in wage rates. Thus, only the public sector seems prepared to accommodate the desires of youth who wish to attend school while working part-time. Entitlement job creation will clearly enhance these opportunities. This table suggests that in the preprogram period, in-school youth who wish to work and therefore must work part-time have had very few jobs to compete for. If many youth do have this desire, Entitlement enrollments may be high.

Table 5.23 Wage Rates and Hours by Sector, Fall, 1977

Private Sector

Wage Rate	Hours/Week 1-15	16-30	> 30	
≤ $2.30	6.4	12.5	16.3	35.1
$2.31-$2.90	5.6	15.6	20.0	41.2
> $2.90	3.9	5.7	14.1	23.7
	15.8	33.9	50.3	100.0

Public Sector

Wage Rate	Hours/Week 1-15	16-30	> 30	
≤ $2.30	6.6	23.3	16.3	46.2
$2.31-$2.90	16.1	14.9	14.3	45.1
> $2.90	3.6	2.4	2.6	8.6
	26.3	40.5	33.2	100.0

5.7 Summary

In this chapter we have presented a summary of the work experience of eligible youths--the level and determinants of total labor supplied to the market; the types of jobs program eligible youth typically hold; and the compatibility of jobs youths have with the jobs youths have with the jobs Entitlement will provide to some of them.

Between January, 1977 and the baseline interview in late spring, 1978, 42.2 of eligible youths did not work at all. Employment nearly doubled from 14.2 percent in spring, 1977 to 27.8 percent in spring, 1978. Employment reached 41.1 percent of eligible youths during summer, 1977. Most youths work during the summer only. Whites and Hispanics have higher employment rates than blacks, and men higher than women. White male youths face the best employment prospects; black female youths face the worst.

The average work hours per week per person was 4.4 during spring, 1977, 12.4 during the summer, and 7.2 during spring, 1978. White and Hispanic youths work more than blacks and men work more than women. Women with children supply fewer work hours per week than those without children. Youths who are heads of households work more hours per week than youths who live with their parents or guardians. Age has a positive effect on average labor supplied. This effect is stronger during the school year than during the summer. Youths enrolled in school on a full-time basis supply fewer weekly work hours than youths who are not. Finally, grade attainment is positively related to the quantity of labor supplied.

Looking at the demand for youth labor, private sector employment predominates over public sector employment during the school year; the two are almost equal during the summer. Fifty percent of private sector work is full-time (greater than thirty hours per week). The split between part-time and full-time work in the private sector is relatively insensitive to seasonal fluctuations. In contrast, public sector employment is very sensitive, shifting markedly from part-time work during the school year to increased full-time employment in the summer.

Demand for youth labor is highest in the private sector in Denver and Phoenix, where often as many as one-third of all eligibles are employed. Baltimore and the Mississippi sites showed the weakest

demand, with fewer than 10 percent of eligibles employed in their private sectors. Public sector employment fluctuates by season and site, rising dramatically from spring, 1977 to the following summer in all sites, but decreasing to quite different levels in different sites by spring, 1978. At this time, public sector employment in Baltimore remained extraordinarily high (26.3 percent). Across sites, employed youth tend to work part-time during the school year, but full-time work increases dramatically during the summer.

Over time, and excluding summer, hourly wage rates have exhibited an upward trend, rising from an average of $2.39 in spring, 1977 to $2.54 in the spring, 1978. Men generally earn more than women, Hispanics more than whites, and whites more than blacks. The higher wages earned by Hispanics may be accounted for by the concentration of Hispanics in Denver and Phoenix--the high wage sites. Wage rates tend to increase as a youth ages. In-school youth, generally part-time workers, earn less than out-of-school youth. Youths making steady progress in school tend to earn higher hourly wages than those who have finished less than nine grades or are GED enrollees. This trend is probably due to a combination of factors associated with aging, work attachment, work experience, and gains from schooling.

Many youths work at or below the federal minimum wage. The percentage who do so is greatest during the summer. Increases in the federal miminum wage, however, do seem to increase overall wage levels. Youths working in the private sector generally make more than their counterparts in the public sector. Within the private sector, wages paid to full-time employees are higher than those paid to part-time employees. This is also generally the situation in the public sector.

During the summer, 45.3 percent of private sector workers were at or below the minimum wage. For the public sector, the comparable figure was 60.2 percent. Public sector jobs are more concentrated at low wage rates, and are less likely to be full-time than is the case for the private sector. In the fall, private sector jobs remain predominantly full-time, and wages tend to increase. The public sector shows a dramatic shift toward part-time jobs, and wages also rise. Overall

in-school youth who wish to work and therefore must work part-time have had very few jobs to compete for. If many youth do have this desire, Entitlement enrollments may be high.

6.0 SUMMER EMPLOYMENT, SCHOOL-YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT JOINTLY CONSIDERED: RESULTS FROM A MULTIVARIATE MODEL

6.1 Introduction and Overview

The Policy Setting

The Entitlement demonstrations come after more than a decade of experience with national programs aimed at providing summer jobs, jobs during the school year, and training and other services to disadvantaged youth. In addition, some of these programs sought explicitly to deter school dropout. In many ways, Entitlement departs very little from these programs. However, in two ways it does depart significantly. The first is that the number of program slots is not fixed - all applicants who prove to be eligible are served. The second is that Entitlement is a year-round program in which a summer job, a job during the school year, and school enrollment (or its equivalent), with satisfactory attendance and progress, are combined in a package: a youth who fails to successfully participate in any one of these three activities is dropped from the program. (The youth can, however, re-enroll at a later point in time.) This chapter is concerned with the likely behavioral implications of the programmatic linkage of summer employment, school-year employment, and school enrollment.

Consider, by comparison, the Neighborhood Youth Corps (NYC), a program begun in 1966, extended well into the 1970's, but no longer in existence on a national scale. This began as three distinct programs: Summer NYC, In-School NYC, and Out-of-School NYC. The first of these provided a full-time summer job, the second provided a part-time job during the school year to in-school youth (without, apparently, any real monitoring of, or insistence upon, adequate school attendance or performance), and the third provided a full-time job during the school year to out-of-school youth, most of whom were school dropouts. These were employment programs with little or no ties to school performance, and an individual youth could, at his own discretion, enroll in one or more of these programs, subject, of course, to the availability of slots. As a result, undesired effects can be imagined in which the programs encouraged school dropout by increasing attachment to work. Such a possibility was noted in an early evaluation of two of these programs.

> "We are thus led to speculation that merely providing high school jobs for low income students is not enough to prevent dropouts. Part-time jobs and small income from work may whet appetites for full-time jobs and larger incomes. An NYC job may encourage some to drop out of high school at the same time as it permits and motivates others to continue their education. The improved attitudes toward work reported by the NYC participants and the actual evidence of labor market benefits may facilitate the transition from school to work for some even before their graduation."
>
> (Somers and Stromsdorfer, 1970:309)

Despite a reasonable amount of evaluation effort (see, for example, Somers and Stromsdorfer, 1970; Smith and Pitcher, 1973; Walther and Magnusson, 1975) we do not know the extent of overlap among participants in these three NYC programs, nor do we understand the extent to which these programs altered the schooling behavior of youths. That this remains an important unresolved issue is shown by its re-appearance in a recent evaluation of Job Corps, a residential work/training program for disadvantaged out-of school youth:

> "We hypothesize that former Corpsmembers have higher probabilities of participating in training, work-experience, and education programs than comparison-group members. However, to the extent that Job Corps succeeds in improving immediate postprogram labor-market opportunities (thereby increasing the opportunity cost of time spent in such programs), this hypothesis is weakened."
>
> (Mallar, et al., 1978: 25)

In addition, academic studies have failed to provide a picture of the relationship between school enrollment and work experience among youth who would be eligible for programs such as these. And yet, without knowledge of the preprogram inter-relations among summer employment, school-year employment and school enrollment, it is impossible to assess the likely effectiveness of a program which, like Entitlement, seeks to tie these together. The purpose of this chapter is to provide this information. We report the results of fitting a multivariate model in which each of these three activities is taken as a dependent variable, each is permitted to depend upon a set of explanatory variables (race, sex, age, highest grade attained in school, etc.), and in which the correlation of each dependent variable with each of the others, holding constant the explanatory variables, is also

calculated. As a result, one can examine over-time patterns of school and work for otherwise identical individuals, and measure the effects of individual characteristics upon these patterns. This, in turn, shows the extent to which participation in Entitlement involves patterns of behavior which will be new to eligible youth. For example, it is possible that for this population, simultaneous school and work is not as attractive as concentration on either school or work alone, or involvement in neither. In such a case, enrollment in the Entitlement program will depend upon the extent to which the provision of a summer job and a job during the school year is an effective "carrot" in combination with the "stick" of termination from the program if school performance is unsatisfactory. Thus, the results of this chapter provide a preliminary assessment of the extent to which program requirements are likely to conflict with existing habits and experiences.

School and Work as Complements and Substitutes

Throughout this chapter we shall refer to pairs of activities as being either "complements" or "substitutes." The former term describes activities which tend to occur in combination--most individuals engage in either both or neither. The latter term describes activities which tend to occur in isolation--most individuals engage in one or the other, but not both or neither. These are useful ideas for analyzing a program which seeks to treat school and work as complements, but it should be noted that we use these terms only as just defined, and not in the more formal economic sense.[1] Rather, in this report we restrict ourselves to a first empirical description of the over-time behavior of the joint distribution of work and schooling. Future reports will have more to say regarding the complex issues surrounding the costs and benefits of these activities.

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[1] That is, we are not discussing Hicks-Allen income-compensated substitution effects or goods which are complements or substitutes within some production function. Nor do we try to explicitly estimate the "shadow price" of these activities in order to discover own-price and cross-price elasticities.

Estimating the Behavior of "Otherwise Identical" Individuals

The impact of Entitlement will come through altered work experience, or school experience, or both, rather than through any alteration in individual background characteristics such as race, sex, or parents' education. However, these background characteristics account for much of the preprogram variation in school and work experience. Clearly, these variables must be held constant to appropriately assess the extent to which school and work occur together (or apart) for otherwise identical individuals.

One method of doing this is cross-tabulation, the results of which are displayed in the preceding chapters. The problem with this method is that only a few variables can be simultaneously controlled before the results become both unreliable and difficult to display. The solution to this problem is to fit a multivariate statistical model, one which can simultaneously handle three dependent variables, each coded 0-1 ("1" if an individual engages in the particular activity, "0" otherwise). This chapter summarizes the results of such a calculation.

The three dependent variables are taken in pairs and described in the following sections:

6.2 Employment During the School-Year and School Enrollment

6.3 Employment During the Summer and Employment During the School-Year

6.4 Employment During the Summer and School Enrollment

Within each section, 2x2 cross-tabulations show the percent of the sample which engage in neither activity, engage in either alone, and engage in both together. The first such table shows this relationship without controls for other variables, and thus gives the "gross" relationship. The remaining tables show the "net" relationship--that for individuals whose background characteristics have been statistically held constant at a particular combination of values. By varying these one at a time, the independent contribution of each is revealed.[1]

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[1] The tables of this chapter have been created from those of Appendix B by sequentially adding across one of the three dimensions displayed there. The interested reader is urged to consult the Appendices for a fuller description of the calculations underlying these results.

6.2 School-Year Employment and School Enrollment

School Year Employment and School Enrollment are Negatively Related

The first panel of Table 6.1 displays the simple cross-tabulation of school enrollment and work experience during the 1977-78 school year. In this table (as in all the others in this chapter) one can add across the rows or columns to get the value in the margin (for example, 18.0 + 12.2 = 30.2; 18.0 + 51.4 = 69.4, etc.), and these marginal values add to 100 (30.2 + 69.8 = 100). Thus, during the 1977-78 school year, 69.8 percent of the sample are enrolled in school while only 30.6 percent are at work. Looking within the table, 18 percent are engaged in neither activity, 12.2 percent are at work only, 51.4 percent are in school only, and 18.4 percent are engaged in both activities. The concentration of youth in the "school only" cell causes many more individuals to be engaged in "either activity but not both" than are engaged in "both or neither." This suggests that school and work are substitutes rather than complements.

A formal statistical test confirms this hypothesis.[1] Accordingly, it is of some interest to ask by how much the schooling/work distribution would differ if these activities were not substitutes. The evidence is provided by the second panel of Table 6.1.[2] If school and work were unrelated, the share of youth who are only in school would decrease by 6.2 percentage points, to 45.2 percent, while the share of those only at work would decrease by 1.5 percentage points. The share of youth engaged

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[1] This test involves comparing the product of the values on the diagonal of the table, in this case 18.0 x 18.4, with the product of the terms on the off-diagonal, here 51.4 x 12.2. Since the former value is less than the latter, the off-diagonal predominates and the activities are substitutes. If the diagonal had predominated, the activities would be complements. Of course, the conclusion that the activities are substitutes can also be reached by comparing the percent working among those in-school with the percent working among those out-of-school.

[2] This panel was constructed from the first panel by a statistical procedure which maintains the propensities for school vs. no school and for no work vs. work displayed there, but eliminates the inverse relation between school and work. The interested reader will note that in this panel, the product of diagonal terms equals that of off-diagonal terms.

TABLE 6.1

SCHOOL ENROLLMENT AND SCHOOL YEAR EMPLOYMENT, OVERALL SUMMARY*

Observed:

Employed, Fall 1977/
Spring 1978

		NO	YES	
Enrolled All Year 1977-78	NO	18.0	12.2	30.2
	YES	51.4	18.4	69.8
		69.4	30.6	100.0

Estimated to Occur if School and Work Were Not Substitutes:

Employed, Fall 1977/
Spring 1978

		NO	YES	
Enrolled All Year 1977-78	NO	21.8	10.7	32.5
	YES	45.2	22.3	67.5
		67.0	33.0	100.0

*These represent average values for the entire sample, without controls for individual background characteristics.

in both activities would increase by 3.9 percentage points, and the share engaged in neither would increase by 3.8 percentage points. While these are not insignificant quantities, they are not really large, either. In other words, the major determinants of the observed school/work distribution are propensities to do each, rather than interaction between them. The Entitlement demonstration will have to enforce incentives and disincentives in order to successfully require school and work simultaneously during the school year, but it may not meet too strong resistance on this score.

A final point should be made. The calculations just described measure the gross substitution effect between school and work, that is, the relationship between these activities when no other variables are held constant. More to the point for Entitlement is the net substitution effect - that between these activities for otherwise identical individuals. This net effect is found to be even weaker than the gross effect (see Appendices for details), further supporting the view that joint school/work under Entitlement may not encounter much resistance.[1]

The Effects of Progress in School

In the short run, the planned effect of Entitlement is simply to put youth usefully to work in school and on the job. If this occurs for even one school year, program participants will have advanced one grade further toward high school graduation, and we might hope that a cumulative effect will develop, with further progress becoming easier as successes mount and the distance to the goal of high school graduation shortens. Of course, as shown in Chapter 5, higher grade attainment is likely to be associated with the ability to command a higher wage rate as well as with increased age, and for these, as well as other reasons, progress in school may be associated with pulls out of school and into the full-time labor market. The outcome of these conflicting forces is clarified by Table 6.2.

This table shows the school/work distribution for otherwise identical youth who have attained different levels of progress through school. The percentages shown are estimated values for black males in Baltimore who are living with both of their natural parents, with parents' education equal to 9th grade. A separate 2x2 school/work table is shown for those

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[1] Of course, we are not holding constant in this discussion the effect of intensity of effort in either school or work. Vigorous efforts to enforce attendance in school or require some minimum academic performance may alter these preprogram findings.

TABLE 6.2

THE EFFECT OF PRIOR GRADE ATTAINMENT ON
SCHOOL ENROLLMENT AND SCHOOL YEAR EMPLOYMENT*

Highest grade
Attained ≤ 8:

		Employed Fall 1977/ Spring, 1978 NO	YES	
Enrolled All Year 1977-78	NO	14.2	12.1	26.3
	YES	47.1	26.5	73.7
		61.3	38.7	100

Highest Grade Attained = 9:

		Employed Fall 1977/ Spring, 1978 NO	YES	
Enrolled All Year 1977-78	NO	13.4	10.0	23.5
	YES	52.2	24.3	76.5
		65.6	34.3	100.0

Highest Grade Attained = 10:

		Employed Fall 1977/ Spring, 1978 NO	YES	
Enrolled All Year 1977-78	NO	7.1	8.5	15.5
	YES	44.5	39.9	84.5
		51.6	48.4	100.0

Highest Grade Attained = 11:

		Employed Fall 1977/ Spring, 1978 NO	YES	
Enrolled All Year 1977-78	NO	4.5	7.2	11.7
	YES	50.4	37.9	88.3
		54.9	45.1	100.0

*These are estimated values for youth who are: black, male, living in Baltimore with both natural parents who have a 9th grade education.

who, by June 1977, had attained fewer than nine grades, those who had attained nine grades, those who had attained 10 grades, and those who had attained 11 grades. Similar comparisons could be generated for youth with different background characteristics (for example, black females, in Cincinnati, living with their natural mother only, etc.), but this is unnecessary since the pattern of school progress effect would be similar.

Examining first the percentages in the margin for school enrollment during 1977-78, we see that these increase steadily with increased prior grade attainment, rising from 73.7 percent for those with fewer than nine school grades, to 76.5 percent, 84.5 percent, and finally 88.3 percent for those who had completed 11th grade before the beginning of the 1977-78 school year. This is encouraging, since it supports the view that the Entitlement goal of high school graduation may be aided by a cumulative effect, in which each grade attained makes subsequent school enrollment more likely.

The other margin of these tables show that job-holding during the school-year also rises with grade attainment, although less smoothly. The split here is between those who have completed fewer than 10 grades and display an employment rate of approximately 36 percent, and those who have completed 10 or 11 grades and display a rate approximately 10 percentage points higher. This, too, is encouraging for Entitlement, since it suggests that eligible youth do not lose their taste for part-time work as they progress in school.

Perhaps the most important result in Table 6.2 occurs for the cell showing the percentage of youth engaged in neither school nor work. The percentage of such "societal dropouts" decreases steadily with grade attainment, falling from 14.2 percent to 4.5 percent, a decline by a factor greater than 3.0. And for other population subgroups, the magnitude of this decline is even larger. (For whites with similar characteristics to the blacks in this table, the decline is from 26.4 percent to 3.5 percent.)

Further study of the panels of this table shows that progress in school also increases the propensity to engage in school and work simultaneously. (For whites the effect is even more dramatic than shown here for blacks, rising from 16.7 percent of those with less than nine completed grades enrolled in school and at work, to 54.7 percent of those who have completed 11th grade involved in both activities.) Once again there is strong support for the positive self-sustaining effects of grade progression.

The Over-Time Persistence of Patterns of Employment and School Enrollment

It is increasingly being recognized that persistence-in-state is a key determinant of school and work patterns throughout the labor force (Meyer and Wise, 1978; Clark and Summers, 1979): once acquired, school or work attachment appear to be self-reinforcing. Combined with the findings of the previous section concerning the positive effects of grade attainment, this result would argue very strongly for the Entitlement emphasis on school and work combined.

Table 6.3 shows that this persistence-in-state is indeed very strong within our sample. This table displays estimated school enrollment/employment patterns for black males in Baltimore, 17½ years of age, living with both natural parents, with parents education equal to 9th grade. Panel A is for those who have attained no higher than 8th grade, Panel B for those who have completed 11 grades. For each group, the 1977-78 school year pattern is shown separately according to categories of 1976-77 school-year experiences: neither enrolled nor employed, enrolled only, and employed only. The evidence is that even within categories of grade attainment, state-persistence exerts a powerful effect upon both school and work.

Panel A demonstrates that even among those who have made only limited progress in school, school enrollment in one year is a strong determinant of enrollment in the next. Of those enrolled during 1976-77 (but not employed) 84.3 percent were enrolled during 1977-78. By comparison, of those not enrolled during 1976-77, either 20 percent or 11.4 percent were enrolled during 1977-78, depending upon whether the individual was employed during Spring, 1977. Panel B confirms this result at an overall higher level of enrollment: the comparable school enrollment rates for this group vary from 96.7 percent to 51.7 percent (and down to 46.4 percent for those not enrolled but employed the previous year). The message is clear: <u>if</u> Entitlement can bring a youth back to school for even one year, the effects upon school enrollment may persist. On the other hand, if a job is provided, but the youth is not in school (as in the Out-of-School Neighborhood Youth Corps), the youth's chances of subsequently returning to school may be reduced.

TABLE 6.3

THE EFFECT OF PRIOR SCHOOL ENROLLMENT AND SCHOOL YEAR EMPLOYMENT ON SUBSEQUENT SCHOOL ENROLLMENT AND SCHOOL YEAR EMPLOYMENT*

6.3.A Highest Grade Attained $\leq$ 8:

Not Enrolled All Year, 1976-77; Not Employed, Spring, 1977:

		Employed Fall 1977/Spring 1978		
		NO	YES	
Enrolled All Year 1977-78	NO	51.8	28.2	80.0
	YES	11.7	8.4	20.0
		63.5	36.6	100

Enrolled All Year, 1976-77; Not Employed, Spring, 1977:

		Employed Fall 1977/Spring 1978		
		NO	YES	
Enrolled All Year 1977-78	NO	10.9	4.8	15.7
	YES	53.5	30.8	84.3
		64.4	35.6	100

Not Enrolled All Year, 1976-77; Employed, Spring, 1977:

		Employed Fall 1977/Spring 1978		
		NO	YES	
Enrolled All Year 1977-78	NO	19.5	69.1	88.6
	YES	2.1	9.3	11.4
		21.6	78.4	100

*These are estimated values for youth who are: Black, Male, 17½ years old, living in Baltimore with both natural parents who have a 9th grade education.

TABLE 6.3 (Continued)

THE EFFECT OF PRIOR SCHOOL ENROLLMENT AND SCHOOL YEAR EMPLOYMENT ON SUBSEQUENT SCHOOL ENROLLMENT AND SCHOOL YEAR EMPLOYMENT*

6.3.B Highest Grade Attained = 11:

Not Enrolled All Year, 1976-77; Not Employed, Spring, 1977:

		Employed, Fall 1977/Spring 1978		
		NO	YES	
Enrolled All Year 1977-78	NO	26.9	21.4	48.3
	YES	34.7	17.1	51.7
		61.6	38.5	100.0

Enrolled All Year, 1976-77; Not Employed, Spring, 1977:

		Employed, Fall 1977/Spring 1978		
		NO	YES	
Enrolled All Year 1977-78	NO	1.8	1.5	3.3
	YES	65.0	31.7	96.7
		66.8	33.2	100.0

Not Enrolled All Year, 1976-77; Employed, Spring, 1977:

		Employed, Fall 1977/Spring 1978		
		NO	YES	
Enrolled All Year 1977-78	NO	12.2	41.4	53.6
	YES	15.4	31.0	46.4
		27.6	72.4	100.0

*These are estimated values for youth who are: Black, Male, 17½ years old, living in Baltimore with both natural parents who have a 9th grade education.

Employment during the school year also shows persistence-in-state, with 1977-78 employment rates for those employed the previous year more than double the rates for those not employed at that time. (Results for Panels A and B are comparable in this regard.) Of even greater interest, however, are the patterns of persistence in states defined by school and work jointly. On this account, Table 6.3 is most interesting.

Youth who have completed fewer than nine grades, and who were neither in school nor at work during the 1976-77 school year surely comprise the most troubled group of program eligibles. Panel A shows that fully 51.8 percent of these were neither at school nor at work during 1977-78. This first 2x2 distribution of Table 6.3A is the only one with such strong concentration in the upper left hand corner. These individuals may be the least likely to enroll in Entitlement, while yet being the most in need of help.

The group with greatest concentration on school alone prior to the 1977-78 school year is defined by high grade attainment (11th grade) and concentration in school but not work during 1976-77. These individuals are depicted in the middle panel of Table 6.3B. Fully 96.7 percent of them were enrolled in school during 1977-78, with 65 percent in school only and 31.7 percent at work in addition to school. The fact that so many individuals with strong school attachment combined school and work may indicate that an even higher percentage would be willing to do so when a job is offered through Entitlement. However, it should also be noted that two-thirds of the in-school youth were not at work. Within this group there is no doubt a smaller group with neither the desire nor the need to work. These may not (and probably should not) participate in Entitlement.

Youth strongly attached to work, but not to school, are defined by job-holding during Spring, 1977, the attainment of fewer than nine school grades, and absence from school enrollment during 1976-77. As depicted in the bottom panel of Table 6.3A, fully 69.1 percent of such youth persist in this pattern during 1977-78: they are employed but not in school. Comparing this panel with the top panel in the table shows that those with some work experience during the preceding school-year define a

very different population from those without such experience: the former group have an enormously higher subsequent employment rate and a lower subsequent school enrollment rate. The extent to which Entitlement draws participants from each of these groups will be an important determinant of the program's ultimate impact.

The Effects of Demographic and Family Background Characteristics

Personal characteristics account for much of the observed variation in school enrollment and work experience, but since Entitlement cannot alter these characteristics, they are of more interest as variables to hold constant in the analyses already reported than as causes in their own right. Their effects are briefly summarized here, and more extensively reported in Appendices A and B.

Age is the single strongest determinant of school enrollment, with enrollment rates for the reference population of Table 6.2 (all grades combined) falling from 94.8 percent for 16 year olds to 63.5 percent for 19 year olds. This, of course, is an artifact of the definition of program eligibility: 18 and 19 year olds with strong school attachment have graduated out of the sample. And, for similar reasons, older eligibles show much greater work attachment during the 1977-78 school year: rates vary from 29.6 percent for 16 year olds up to 50.9 percent for 19 year olds.

Race is also a strong determinant of school enrollment: for the reference population of Table 6.3 (prior school and work categories combined, and race permitted to vary) blacks have a school enrollment rate of 84.9 percent, while the white rate is 59.3 percent. (In general, Hispanic rates fall between those of blacks and whites.) This racial difference is reversed for employment rates: the black rate is 39.7 percent while the white rate is 61.2 percent. Whites and blacks have essentially identical percentages engaged in school and work simultaneously. However, for blacks a preponderance of the remainder are in school only, whereas whites are evenly divided between school only and work only.

Males and females have identical school enrollment rates, but among those with low grade attainment, females are less likely to be enrolled than males. Males have higher employment rates, a fact which carries over into a higher share engaged in school and work simultaneously.

Not surprisingly, the absence of natural parents is associated with lower school enrollment rates and higher employment rates, but the differences are not dramatic once other characteristics are controlled. Intersite differences generally resemble those reported in previous chapters, with Denver and Phoenix being high employment, low school enrollment sites, and the Mississippi Pilot and Control sites falling at the opposite extreme.

6.3 Summer and School Year Employment

Summer Employment and School-Year Employment are Positively Related

Entitlement offers employment year-round: the opportunity exists for eligible youth to have a job during the summer and during the school-year, without having to search for work and risk finding nothing, or only a job at below the minimum wage. If employment is habit-forming (Clark and Summers, 1979), the offer of employment at two distinct time periods will be a particularly attractive one. And the possibility that employment at consecutive time periods will act in a complementary fashion for the production of human capital through on-the-job training and the development of good work habits may be realized.

Preliminary evidence on work patterns over time is provided by Table 6.4, the first panel of which shows the gross relationship between summer employment and school-year employment for the sample as a whole. We see that summer employment is more prevalent than school-year employment, 41 percent to 30.6 percent, and that the most frequent pattern (46.7 percent) is to engage in neither. The main diagonal (neither or both) dominates over the off-diagonal (either, but not the other), showing that these activities do indeed behave as complements.

The second panel of this table quantifies the importance of this complementarity by showing the distribution which would result if the chance of working at either time period were unrelated to the chance of working at the other.[1] Under these circumstances the share of youth employed

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[1] The method used here is the same as that for Table 6.1.

TABLE 6.4

SUMMER AND SCHOOL YEAR EMPLOYMENT, OVERALL SUMMARY*

Observed:

Employed, Fall 1977/ Spring 1978

Employed, Summer 1977	NO	YES	
NO	46.7	12.2	59.0
YES	22.7	18.4	41.0
	69.4	30.6	100.0

Estimated to Occur if Summer Employment and School Year Employment Were Not Complements

Employed, Fall 1977/ Spring 1978

Employed, Summer 1977	NO	YES	
NO	37.4	19.0	56.4
YES	28.9	14.7	43.6
	66.3	33.7	100.0

*These represent average values for the entire sample, without controls for individual background characteristics.

at neither time declines by 9.3 percentage points, to 37.4 percent, and the share of youth working at both times declines by 3.7 percentage points, to 14.7 percent, while the values on the off-diagonal rise to 28.9 percent and 19.0 percent respectively. These are relatively large shifts, and their magnitude suggests that, at least in the preprogram environment, the summer/school-year employment distribution is significantly shaped by the propensity of these activities to occur either in combination or not at all. (However, the multivariate analysis shows that this relationship is somewhat weaker for otherwise identical individuals.)

What implication does the positive relationship between summer and school-year employment have for the likely success of Entitlement? The notion that those who desire work will wish to do so in both time periods argues for the ability of the program to attract participants. This, in turn, suggests the possibility that Entitlement could bring a large flow of youth out of the "work in neither time period" cell and into the "work in both time periods" cell. Since most youth responded that they weren't working because they couldn't find work, not because they didn't want it, this outcome appears to be plausible. Still, correct understanding of these issues awaits the program participation data.

The Effects of Progress in School

Inasmuch as Entitlement seeks to promote school progress while providing summer and school-year employment, it is useful to see how these employment patterns vary with grade attainment in the preprogram period. These results, for otherwise identical youth, are displayed in Table 6.5. (This table parallels Table 6.2.)

We see that summer employment increases steadily with grade attainment, a result also found for school-year employment (first remarked upon in Table 6.2). As eligible youths advance further in school, their propensity to hold no job (neither summer nor school-year employment) declines from 47.2 percent to 26.5 percent, while their propensity to work in both periods rises from 21 percent to 33.6 percent. Thus, there appears to be no direct inconsistency between preprogram behavior and the treatment strategy of Entitlement. And, if the direct relationship between employment and grade attainment reflects a "credentialing" effect, a strong response to the Entitlement job offer would be expected.

TABLE 6.5

THE EFFECT OF PRIOR GRADE ATTAINMENT ON SUMMER AND SCHOOL YEAR EMPLOYMENT*

Highest Grade Attained ≤ 8:

		Employed Fall 1977/ Spring 1978: NO	YES	
Employed, Summer 1977	NO	47.2	17.6	64.9
	YES	14.1	21.0	35.1
		61.3	38.6	100.0

Highest Grade Attained = 9:

		Employed Fall 1977/ Spring 1978: NO	YES	
Employed, Summer 1977	NO	45.5	15.6	61.2
	YES	20.1	18.7	38.8
		65.6	34.3	100.0

Highest Grade Attained = 10:

		Employed Fall 1977/ Spring 1978: NO	YES	
Employed, Summer 1977	NO	35.8	22.4	58.2
	YES	15.8	26.0	41.8
		51.6	48.4	100.0

Highest Grade Attained = 11:

		Employed Fall 1977/ Spring 1978: NO	YES	
Employed, Summer 1977	NO	26.5	11.5	38.0
	YES	28.4	33.6	62.0
		54.9	45.1	100.0

*These are estimated values for youth who are: Black, male, living in Baltimore with both natural parents who have a 9th grade education.

TABLE 6.6

THE EFFECT OF PRIOR SCHOOL ENROLLMENT AND SCHOOL YEAR EMPLOYMENT ON SUBSEQUENT SUMMER AND SCHOOL YEAR EMPLOYMENT*

6.6.A Highest Grade Attained $\leq$ 8

Not Enrolled All Year 1976-77; Not Employed Spring, 1977:

		Employed Fall 1977/ Spring 1978 NO	YES	
Employed, Summer 1977	NO	52.5	23.9	76.4
	YES	11.0	12.7	23.6
		63.5	36.6	100.0

Enrolled All Year, 1976-77; Not Employed, Spring, 1977:

		Employed Fall 1977/ Spring 1978 NO	YES	
Employed, Summer 1977	NO	51.0	21.3	72.2
	YES	13.4	14.3	27.8
		64.4	35.6	100.0

Not Enrolled All Year, 1976-77; Employed, Spring, 1977:

		Employed Fall 1977/ Spring 1978 NO	YES	
Employed, Summer 1977	NO	2.8	4.3	7.1
	YES	18.8	74.1	92.9
		21.6	78.4	100.0

*These are estimated values for youth who are: black, male, 17½ years old, living in Baltimore with both natural parents who have a 9th grade education.

TABLE 6.6 (Continued)

THE EFFECT OF PRIOR SCHOOL ENROLLMENT AND SCHOOL YEAR EMPLOYMENT ON SUBSEQUENT SUMMER AND SCHOOL YEAR EMPLOYMENT*

6.6.A Highest Grade Attained $\leq$ 8

Not Enrolled All Year, 1976-77; Not Employed, Spring 1977:

		Employed Fall 1977/ Spring 1978 NO	YES	
Employed Summer 1977	NO	49.4	25.7	75.1
	YES	12.2	12.8	24.9
		61.6	38.5	100.0

Enrolled All Year, 1976-77; Not Employed, Spring, 1977:

		Employed Fall 1977/ Spring 1978 NO	YES	
Employed Summer 1977	NO	35.1	11.3	46.4
	YES	31.7	21.9	53.6
		66.8	33.2	100.0

Not Enrolled All Year, 1976-77; Employed, Spring, 1977:

		Employed Fall 1977/ Spring 1978 NO	YES	
Employed Summer 1977	NO	4.1	5.8	9.9
	YES	23.5	66.6	90.1
		27.6	72.4	100.0

*These are estimated values for youth who are black, male, 17½ years old, living in Baltimore with both natural parents who have a 9th grade education.

The Over-Time Persistence of Employment Patterns

Table 6.6 parallels Table 6.3, showing the dependence of summer and school-year employment on previous school and work attachment. And once again very strong patterns of persistence-in-state are in evidence. The group most strongly attached to work but not school in the prior period is defined by those individuals who had attained less than nine school grades, who were not in school during the previous school-year, but who did work during the preceding spring. (See the bottom panel of Table 6.6A.) Among these youth, only 2.8 percent failed to work during either the summer or the succeeding school-year, a remarkable drop from the 50 percent-plus rate shown in panels one and two of this table. In addition, fully 74.1 percent of these youth worked during both periods. This number can be compared with the rate of 12.7 percent for otherwise identical youth who were not employed during Spring, 1977. (See the top panel of Table 6.6A.) Once again the evidence for the persistence of employment over time is overwhelming.

The Effects of Demographic and Family Background Characteristics

The effects of demographic and family background characteristics upon the two work experience variables generally resemble those reported for work during the school year in Section 6.2, and are not repeated here. Once it is understood that employment persists over time, with employment/population ratios being higher in the summer than during the school-year, the main aspects of variation have been captured. For further detail, see Appendices A and B.

6.4 Summer Employment and School Enrollment

Summer Employment and School Enrollment are Positively Related

Since summer employment tends to increase school-year employment, and school-year employment tends to decrease school enrollment, one possibility is that summer employment may decrease school enrollment. Such, however, is not the case. Instead, summer employment is associated with (or selects for) a slight rise in subsequent school enrollment rates, one just high enough to offset the negative effect just described.

The result is shown in Table 6.7 (the panels of which resemble Table 6.1 and 6.4 in construction). Overall, and without controls for other variables, summer employment and school enrollment are very slight complements, although the effect is quite small. As a result, we conclude that these provisions of Entitlement may not be inconsistent.

TABLE 6.7

SUMMER EMPLOYMENT AND SCHOOL ENROLLMENT, OVERALL SUMMARY*

Observed:

		Enrolled All Year, 1977-78 NO	YES	
Employed, Summer 1977	NO	18.4	40.6	59.0
	YES	11.8	29.2	41.0
		30.2	69.8	100

Estimated to Occur if Summer Employment and School Enrollment were not Complements:

		Enrolled All Year, 1977-78 NO	YES	
Employed, Summer 1977	NO	17.9	41.7	59.6
	YES	12.1	28.3	40.4
		30.0	70.0	100

*These represent average values for the entire sample, without controls for individual background characteristics.

The Effects of Progress in School

As noted previously, Table 6.8 shows that progress in school exhibits only positive effects. We find that for otherwise identical youth, increased grade attainment decreases the percentage in the 0,0 cell from 16 percent to 5.4 percent, while the percent in the 1,1 cell rises from 24.8 percent to 55.7 percent. Preprogram behavior continues to suggest that the provisions of Entitlement are likely to be self-reinforcing.

Persistence-in-State

After Tables 6.3 and 6.6, Table 6.9 holds no surprises: once again we see that the behavior of summer employment as a dependent variable resembles that of school-year employment with persistence-in-state playing an important role in determining its joint distribution with school enrollment. Thus, of those with low grade attainment, and neither in school nor at work during the previous school year (the top panel of Table 6.9A), 62.2 percent neither worked during the summer nor enrolled in school during the succeeding school-year. Yet this number drops to 1.9 percent for those with high school attachment (middle panel of Table 6.9B) and to 6.4 percent for those with recent concentration at work (bottom panels of both 6.9A and 6.9B). Meanwhile, those with high work attachment, to the exclusion of school (bottom panel of 6.9A), continue this pattern at a rate of 82.1 percent.

6.5 Summary and Conclusions

This chapter considers the joint relationships among school enrollment, school-year employment and summer employment with the intent to both reveal the more complex aspects of these behaviors of the Entitlement target youth and to analyze the likelihood that the treatment strategy of the Entitlement program is potentially beneficial to these youth. Several factors stand out.

First, work and school are gross substitutes for each other but the net degree of substitution may not be strong. Thus, the intent of Entitlement to encourage simultaneous schooling and work may be a feasible policy option. Second, the behavior of the target population for Entitlement demonstrates strong "persistence-in-state" effects. That is, individuals who are in school or who work in a given period are also quite

likely to be in school or at work in a subsequent period. This suggests that if the Entitlement program succeeds in drawing youth back to school, subsequent schooling may result. Such effects, of course, remain to be measured for the Entitlement program. And, in particular, it may be difficult for the program to overcome patterns of behavior that do not include at least some degree of school attachment.

TABLE 6.8

THE EFFECT OF PRIOR GRADE ATTAINMENT ON SUMMER EMPLOYMENT AND SCHOOL ENROLLMENT*

Highest Grade Attained ≤ 8:

Employed, Summer 1977	Enrolled All Year, 1977-78: NO	YES	
NO	16.0	48.8	64.9
YES	10.3	24.8	35.1
	26.3	73.6	100.0

Highest Grade Attained = 9:

Employed, Summer 1977	Enrolled All Year, 1977-78: NO	YES	
NO	14.2	46.9	61.2
YES	9.2	29.6	38.8
	23.4	76.5	100.0

Highest Grade Attained = 10:

Employed, Summer 1977	Enrolled All Year, 1977-78: NO	YES	
NO	10.3	47.9	58.2
YES	5.3	36.5	41.8
	15.6	84.4	100.0

Highest Grade Attained = 11

Employed, Summer 1977	Enrolled All Year, 1977-78: NO	YES	
NO	5.4	32.6	38.0
YES	6.3	55.7	62.0
	11.7	88.3	100

*These are estimated values for youth who are: black, male, living in Baltimore with both natural parents who have a 9th grade education.

TABLE 6.9

THE EFFECT OF PRIOR SCHOOL ENROLLMENT AND SCHOOL YEAR EMPLOYMENT ON SUBSEQUENT SUMMER EMPLOYMENT AND SCHOOL ENROLLMENT*

6.9.A Highest Grade Attained ≤ 8:

Not Enrolled All Year, 1976-77; Not Employed, Spring, 1977:

		Enrolled All Year, 1977-78: NO	YES	
Employed, Summer 1977	NO	62.2	14.2	76.4
	YES	17.8	5.9	23.6
		80.0	20.1	100.0

Enrolled All Year, 1976-77; Not Employed, Spring, 1977:

		Enrolled All Year, 1977-78: NO	YES	
Employed, Summer 1977	NO	12.3	60.0	72.2
	YES	3.4	24.3	27.8
		15.7	84.3	100.0

Not Enrolled All Year, 1976-77; Employed, Spring, 1977:

		Enrolled All Year, 1977-78: NO	YES	
Employed, Summer 1977	NO	6.5	0.6	7.1
	YES	82.1	10.8	92.9
		88.6	11.4	100.0

*These are estimated values for youth who are: black, male, 17½ years old, living in Baltimore with both natural parents who have 9th grade educations.

TABLE 6.9 (Continued)

THE EFFECT OF PRIOR SCHOOL ENROLLMENT AND SCHOOL YEAR EMPLOYMENT ON SUBSEQUENT SUMMER EMPLOYMENT AND SCHOOL ENROLLMENT*

6.9.B Highest Grade Attained = 11

Not Enrolled All Year, 1976-77; Not Employed, Spring, 1977:

		Enrolled All Year, 1977-78 NO	Enrolled All Year, 1977-78 YES	
Employed, Summer 1977	NO	38.4	36.7	75.1
	YES	9.9	15.1	24.9
		48.3	51.8	100.0

Enrolled All Year, 1976-77; Not Employed, Spring, 1977:

		Enrolled All Year, 1977-78 NO	Enrolled All Year, 1977-78 YES	
Employed, Summer 1977	NO	1.9	44.5	46.4
	YES	1.4	52.2	53.6
		3.3	96.7	100.0

Not Enrolled All Year, 1976-77; Employed Spring, 1977:

		Enrolled All Year, 1977-78 NO	Enrolled All Year, 1977-78 YES	
Employed, Summer 1977	NO	6.3	3.6	9.9
	YES	47.3	42.8	90.1
		53.6	46.4	100.0

*These are estimated values for youth who are: black, male, 17½ years old, living in Baltimore with both natural parents who have 9th grade educations.

7.0 SUMMARY AND CONCLUSION

> "These results suggest, however, that a successful policy to reduce unemployment among dropouts might well have the side effect of encouraging boys to drop out of school before high-school graduation."
>
> Duncan (1965; 134)

Thus, fourteen years ago, did Beverly Duncan identify one of the key issues of Entitlement. In the interim, national policy ignored this issue, focusing instead on providing jobs for youth, with no concern for the possible impact of these programs in increasing school drop-out behavior. Nor did any of the evaluations of these programs seriously attempt to measure such an effect. Now, as a result of the 1977 Youth Act, there are demonstration projects which explicitly tie school and work together. As a result, emphasis shifts from that of a jobs program to that of offering a job as an inducement to school enrollment and performance. Year-round employment is now offered, both on-the-job and in-school performance are required, and funds are available to serve all eligibles. This report has sought to reflect these changed emphases.

Also new with this program is the opportunity to collect data really adequate to the evaluation task. Thus, before program start-up, a sample of eligibles in four pilot and four matched control sites was identified and interviewed. These individuals will be re-interviewed during 1979, 1980, and 1981, and whether each participated in the program will be ascertained.[1] As a result, we are able to study the personal characteristics which determine self-selection into the program, and we are also able to provide, in unprecedented detail, a picture of the school and work behavior of youth from low-income households. This report represents our first look at the baseline data. It seeks to provide a foundation for further work on general issues surrounding youth schooling and work-related behavior as well as for the detailed evaluation of the Entitlement program impact.

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[1] A great deal of other information will also be collected during these interviews. In addition, school records are being collected for all members.

We have found that the sample of program eligibles is predominantly black, poor, and disadvantaged. Over 70 percent come from households receiving some type of welfare assistance, and only 26 percent are living with both biological parents. Fully 25.9 percent report having at least one child. For 19-year old females this figure is 51.8 percent. Only 3.2 percent of eligibles have ever been married.

Dropping out of school is a significant problem for these youth. Only 66.5 percent were enrolled throughout the 1977-78 school year. And despite the fact that they are aged 16 through 19, 17 percent had completed fewer than nine school grades. In addition, a significant proportion of the sample has not held a paying job, and of those with some work experience, most have worked only at very low wage rates. Thus, of those at work during the summer, 1977, 52.2 percent were paid at or below the federal minimum wage.

We have also found that in this preprogram period, school and work are related, and both exhibit persistence-in-state over time. During the school year, employment and school enrollment are substitutes rather than complements; individuals tend to engage in one or the other, rather than both or neither. Thus we may anticipate that Entitlement incentives and disincentives will have to be appropriately structured and firmly enforced if individuals are to perform adequately at both activities. However, the observed net inverse relationship between these activities is relatively small, so that the program may not have too much resistance to overcome.

Over time, in-school youth tend to persist in school, and employed individuals tend to continue to be employed. These patterns suggest that if Entitlement is successful in attracting a youth to combined school and work, momentum for persistence in the program and further progress in school and work may develop. Further evidence for a possible "snowball" effect is that as progress is made toward high school graduation, sampled individuals showed a rapidly declining propensity to be both out of work and out of school. We intend to test these hypotheses as follow-up data become available.

In conclusion, we note that the Entitlement demonstrations appear to be well targeted on the youth population most in need, and take an innovative approach to providing jobs while discouraging school drop-out. The success of this approach is likely to depend upon youth perceptions of the attractiveness of the job offer, and the extent to which program operators are able to provide meaningful job experiences, accurate and timely monitoring of school and work performance, and believable deterrence to participant non-performance. Our next report, a preliminary study of program participation, will begin to address several of these issues.

Appendix A: A MODEL OF SCHOOL ENROLLMENT AND WORK EXPERIENCE

A.1 A Multivariate Model

This and the following chapter report the results of estimating a multivariate model with baseline data in order to analyze preprogram school enrollment and work experience. The necessity for this procedure is demonstrated by a quick perusal of the tables presented in Chapters 4 and 5. There we see that if the method of analysis is simple cross-tabulation or comparison of mean-differences, even a sample size in excess of 6,000 observations can reliably support controls for only two or three correlated variables. Since we must often simultaneously control for many explanatory variables, special statistical techniques are required. These are described briefly here.[1] The resulting modeling effort provides us with a parsimonious description of net effects and their consequences for the joint distribution of preprogram school enrollment and work experience among program-eligible youth. This procedure also points the way toward the models to be used in the analysis of Entitlement demonstration project impact.

Issues of Model Specification

In this report, we formally model only the binary variables: enrolled in school versus not enrolled, employed at work versus not employed. Models for the prediction of the hours expended on these activities and models which simultaneously consider both these binary variables and the continuous hours variables will be the subject of a future report. However, the issues raised and the techniques applied in this future work will emerge as quite natural extensions of the work reported here.

A number of issues are crucial in the attempt to appropriately model school enrollment and work experience. These include the reality that school enrollment and youth labor supply decisions are simultaneously determined and that prior decisions and experience in these spheres affect future decisions and experience. Moreover, these activities are in competition for the individual's time during the school year, but not (usually) during the summer, the behavioral relationships governing them will differ in the two periods. Thus, school enrollment and employment during the school year will likely be found to be substitutes rather than complements, and

[1] For a more technical description, see Appendix D.

propensities to engage in each of these activities will be inversely related, other things being equal. It is also likely that summer employment and school-year employment are positively related, while the relationship between summer employment and school enrollment (net of school-year employment) cannot be determined a priori.

As exogenous variables we have the usual -- age, race, sex, site -- and these, with the addition of family background variables such as the presence of both parents and parents' education, provide the basis for a reduced form model. That is, a model in which all explanatory variables act upon schooling and work without themselves acted upon in return, so that estimated parameters measure final effects. At least two points of special interest should be noted. First, age is measured in months. The large sample size thus provides an unprecedentedly detailed view of the consequences of aging during this crucial life-cycle period.[1] Second, the distribution of the sample across eight sites provides an unusual opportunity to test for the nature and magnitude of local labor market and school system effects upon individual behavior.[2] In this report, dummy variables are used as a first step toward the exploration of net site differences. Future work will delve more deeply into the structural determinants of these effects.

As far as dynamic models are concerned, we have attempted to proceed cautiously in view of the little that is known regarding the complex causality of decision-making during the transition from school to work. Here one must recognize that with the highest grade attained in school held constant, increasing age can be expected to be positively associated with the propensity to be employed and negatively associated with the propensity to be enrolled in school, but in both cases because of its correlation with unmeasured variables. For example, when one focuses upon those who have only attained tenth grade, and lets age range from 16 to 19, one picks up increasingly higher proportions

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[1] To the best of our knowledge the only previous empirical work with really detailed age trajectories are the single-year-of-age calculations in Farkas, 1977.

[2] More usual data sets either focus upon individual behavior in a nationally representative sample lacking information on local demand side variables, exhibit no variation in these variables because of restriction to a single site, or consist of aggregate data, often for SMSA's with little hope of specifying in detail the behavioral characteristics of individuals. For an important exception, see Gustman and Steinmeier (1979).

of individuals who have both had difficulty with school, and had a longer time to gain at least some experience with and attachment to the labor market. These unmeasured variables can be proxied by lagged values of school enrollment and work experience, but even in this case we are not ably to fully capture the underlying structural determinants of individual choice. In addition, higher grade attainment represents greater school attachment, increased individual skill growth and progress toward graduation, so that it can be expected to exert its own net effect upon future behavior, as well as to produce differences in the effects of other explanatory variables.

Accordingly, basic behavioral relationships are estimated conditional upon, and separately for, the highest grade an individual has attained, and this estimation occurs within a statistical framework which permits summer employment, school enrollment, and school-year employment to mutually affect one another.[1] The resulting net effects (reported in this appendix) and fitted cross-tabulations (reported in Appendix B) provide the proper extension of the work begun in Chapters 4 and 5.

Models of Behavior

We seek to model the patterns and determinants of behavior during the year preceding Entitlement start-up; that is, during Summer 1977, and during the Fall 1977-Spring 1978 school year. Of course, schooling and work related decisions and experiences are a continuous and ongoing process, so that modeling their outcomes at particular points in time necessarily involves certain simplifying assumptions. These are kept as reasonable and flexible as possible. Their justification will lie in the reproducibility and usefulness of the ensuing results.

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[1] The models we use were developed by Nerlove and Press (1973, 1976). They permit jointly dependent qualitative variables to be analyzed with flexibility and power. Linearity is not assumed, interactions are permitted, and explanatory variables can be both qualitative and continuous. Estimation is by maximum likelihood and the estimators have the usual optimal properties. The net effect of each explanatory variable upon each dependent variable is summarized by a single coefficient, as are the net interactions among dependent variables. This approach provides a statistical framework in which log-linear and multivariate logistic models are employed as the appropriate extension of regression techniques to qualitative dependent variables.

Behavior during the period June 1, 1977-May 30, 1978 is modeled as follows. The individual's propensity to be employed during Summer 1977, to be employed during the 1977-78 school year, and to be enrolled in school during the 1977-78 school year are each permitted to depend upon his/her city of residence, race, sex, family type (whether living with both natural parents, natural mother only, natural father only, or neither natural parent), and parents' education. These are basic exogenous variables which help determine the opportunities and constraints faced by individual youths, as well as the tastes which enter each individual's judgment regarding the relative utility of job search and school enrollment. These are not, of course, the only variables which exert such effects, but they do span the basic dimensions of background and family. Also, we judge they are measured more reliably than some other variables. Future work will, however, include estimates of the effects of other background variables, such as family income. Each of these variables is exogenous, since each affects school enrollment and work experience without in turn being affected by them.

The treatment of age in the predictive equations requires special mention. It is a powerful exogenous variable but, even more so than for other variables, the interpretation to be associated with its measured effect depends upon the other variables which are entered alongside it as explanatory variables. Thus, if these comprise only the exogenous variables mentioned above, the coefficient for age is describing a gross aging effect in which the measured consequences of being older rather than younger, but still within the eligible population, are an average of the impact of age upon the highest grade one has attained in school, recent school enrollment and attachment to school, recent work experience and attachment to work, and the net consequences of being older or younger than one's school or work peers. We will estimate this gross aging effect, but we will also report estimates of the net effect of age wherein we control for progress in school, and recent school and work attachment.

Similar care is required in the treatment of progress in school, measured for present purposes as the highest grade the individual attained by the close of the 1976-77 school year. In one set of calculations, the effects of the basic exogenous variables, age excluded, are estimated

separately according to highest grade attained. This provides a simple representation of the dynamic process by which attainment of a particular grade is or is not succeeded by further enrollment, and so on, to graduation. When age, previous enrollment, and previous work experience are added to these models, a richer but more complex dynamic representation is achieved. This representation also provides a view of the net consequences of school and work attachment for behavior in the succeeding period.

These sets of explanatory variables always act upon three binary dependent variables, which jointly determine an 8-cell ($=2^3$) cross-tabulation. These 8 probabilities[1] can be thought of, for expository purposes, as the ultimate dependent variables. However, the Nerlove/Press parameterization of these probabilities provides a useful simplification of this situation. Instead of measuring the effect of each explanatory variable upon each of these 8 probabilities, we simply estimate an equation for each of the three dependent binary variables, and, in addition, estimate three bivariate interaction terms which link these equations together. (See Appendix D for a more formal presentation of this model.) This chapter reports and interprets the resulting coefficient estimates. Appendix B displays the consequences of these net effects and interactions for the full 8-cell distribution. The net effects are analogous to coefficient estimates in regression analysis, but the bivariate interactions may be a bit less familiar. Therefore, before examining the sign and significance of the estimated coefficients, it is useful to explain the interpretation of these terms.

Interpreting Bivariate Interaction Terms in the Multivariate Model

Bivariate interactions function as partial correlation coefficients for pairs of dependent variables, measuring the correlation which remains between them once the effects of the explanatory variables and the other dependent variables have been removed. As is usual in regression analysis, they measure whether a gross relationship between two variables (one found

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[1] For example, 111 referring to the individual propensity to work during the summer, work during the school year, and to be enrolled in school; 110 referring to the individual propensity to work during the summer, work during the school year, and not be enrolled in school; etc.

when no other variables are held constant) corresponds to a true net effect of one upon the other, or is "spurious" and thus disappears when certain explanatory variables are held constant. Thus, the bivariate interaction between school enrollment and work during the school year measures the extent to which there is a net, as opposed to a gross, tradeoff between school and work. Figure A.1 may help to clarify this point.

FIGURE A.1

SCATTERPLOT FOR A GROSS TRADE-OFF BETWEEN SCHOOL AND WORK

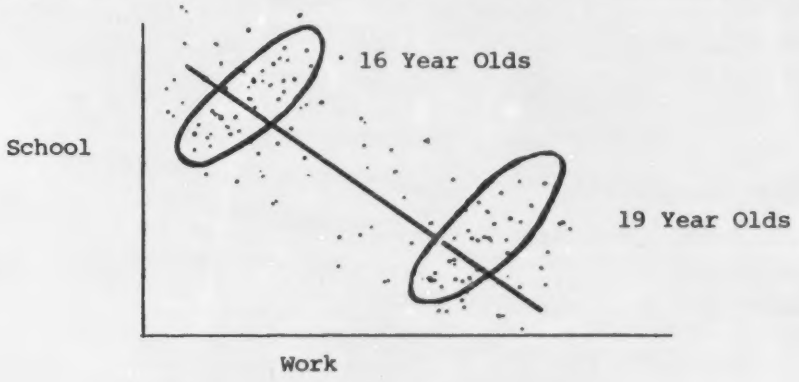

Figure A.1 shows a distribution of observations for a gross trade-off between work and school. That is, with no other variables controlled, these variables are negatively related. However, let us suppose that there is some other variable, age, for example, which is positively associated with work and negatively associated with schooling. Sixteen-year olds are generally to be found in the upper left-hand corner of the figure, while 19-year olds are found in the lower right hand corner. Thus, in gross terms, school attachment declines and his or her work attachment increases, as an individual ages. But nothing is thereby learned about the behavior of two youths of identical age, one of whom spends more time than the other at work. Does he or she, by virtue of the work decision, spend less time at school? In other words, does the mere fact of altering work attachment, other variables held constant, exert an opposite effect upon school attachment? If the bivariate interaction term in our model is significantly negative, the answer is "yes".

A.2 Net Effects and Bivariate Interactions: Models Without Lagged Values of School Enrollment and Work Experience

In this section we report the results of fitting two sorts of specifications to our data. The first is a completely reduced form representation, in which none of the explanatory variables is a direct measure of school or work experience, and age is included as an explanatory variable. The second specification involves separate calculations according to the highest grade the individual has attained, and age is not included as an explanatory variable. Section A.3 reports estimates from a fully dynamic specification, in which calculations are undertaken separately according to highest grade attained, and age as well as lagged values of school enrollment and work experience are included as explanatory variables. In each of these cases the output for the calculation takes two forms. First, coefficients to estimate the net effect of each explanatory variable in an equation to predict school enrollment, an equation to predict school-year employment, and an equation to predict summer employment. And second, bivariate interaction terms which tie these equations together and estimate the correlations which remain among the dependent variables after the effects of the explanatory variables have been accounted for. These coefficient estimates of net effect provide definitive tests of the existence of effects first observed in Chapters 4 and 5, and the bivariate interaction estimates indicate which of the dependent variables are net substitutes or complements for one another. In addition, these interactions show how this substitution or complementarity depends upon the particular set of explanatory variables controlled in the analysis. The implications of all this for school enrollment and work experience propensities are presented in cross-tabular form in Appendix B.

Table A.1 reports the results of fitting a reduced-form specification to the full sample. The table presents the sign of the estimated effect, with its associated t-statistic in parentheses. (All coefficient estimates are presented in Table A.2.) This statistic provides a formal test of the null hypothesis that the effect in question is zero.[1] In view of the

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[1] For a two-tailed test, at a 95 percent level of significance, a t-statistic in excess of 1.96 indicates a significantly non-zero effect. For a 99 percent significance level, the critical value is 2.58.

TABLE A.1

SUMMARY* OF NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. REDUCED FORM SPECIFICATION, AGE INCLUDED.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Female versus Male	+ (0.88)	- (5.14)	- (9.89)
White versus Black	- (14.97)	+ (8.02)	+ (0.84)
Hispanic versus Black	- (6.46)	+ (1.72)	+ (1.23)
Denver versus Baltimore	- (2.21)	- (1.08)	+ (7.30)
Phoenix versus Baltimore	- (3.23)	+ (0.00)	+ (4.77)
Cincinnati versus Baltimore	- (1.78)	- (7.59)	+ (5.33)
Louisville versus Baltimore	- (4.31)	- (4.01)	- (0.97)
Cleveland versus Baltimore	+ (1.65)	- (7.44)	+ (9.03)
Mississippi Pilot versus Baltimore	+ (6.19)	- (7.56)	- (4.78)
Mississippi Control versus Baltimore	+ (3.62)	- (7.64)	+ (3.55)
Age	- (25.52)	+ (6.71)	+ (6.51)
Neither Natural Parent versus Both Natural Parents	- (7.90)	+ (1.62)	- (1.20)
Natural Mother Only versus Both Natural Parents	- (6.19)	+ (0.00)	+ (0.99)
Natural Father Only versus Both Natural Parents	- (2.68)	+ (0.15)	- (0.05)
Parents Education	+ (7.03)	+ (1.39)	+ (0.48)

Bivariate Interactions:

School Enrollment, School Year Employment	-	(3.82)
School Enrollment, Summer Employment	+	(7.52)
School Year Employment, Summer Employment	+	(15.69)

*We report the sign of the net effect; t-statistics are in parentheses. See Appendix C for a complete report of all coefficient estimates.

multivariate logistic functional form we are using, the numerical values of the coefficient estimates can be interpreted in terms of their effects upon dependent variable propensities only after some arithmetic manipulation. Accordingly, the coefficient estimates by themselves are not readily enough interpretable to be discussed here. (However, they are documented in Appendix C.) The arithmetic to show the variation in dependent variable propensities induced by the explanatory variables has been performed. The results are examined at length in Appendix B.

Table A.1 shows that, net of other explanatory variables, sex exerts essentially no effect upon school enrollment propensities. The "+" indicates that overall, females are more likely than males to be enrolled during the 1977-78 school year, but t=0.88 shows this effect to be so small as not to be significantly different from zero. Since the entire sample was used for this calculation, the test is quite powerful, and we can be quite confident about this result.

Continuing down the school enrollment equation column, we find whites and Hispanics to be less likely than blacks to be enrolled, with the white/black net difference being second only to the age effect in significance. This is strong corroboration for the tabular results of Table 5.3 and suggests that whereas much of the justification for the Entitlement demonstrations is derived from findings regarding high unemployment rates for minority youth, there may also be a problem concerning low school enrollment rates for white youth from low-income families, a situation upon which the Entitlement demonstrations can also be expected to have some impact.

Significant net site effects upon school enrollment are also to be observed, and they conform, in general, to previous results. Here, seven dummy variables are used to represent the eight sites, with Baltimore being the omitted category (since it has the most observations), so effects are represented as net differences between each site and Baltimore. Not surprisingly, the Mississippi sites and Cleveland report higher school enrollment rates than Baltimore, with the Mississippi pilot/Baltimore comparison significantly larger than each of the others. Denver and Phoenix are, as expected, below Baltimore in school enrollment rates, as are Cincinnati and Louisville. The particularly low school enrollment rate previously reported for Louisville in Table 4.3 is corroborated in Table A.1.

The negative net effect of age upon school enrollment is highly significant. As already noted, this variable, measured in months, provides enormous predictive power for school enrollment within the sample, and moving over its full range (from sixteen years to nineteen years) it is able to drive enrollment propensities from close to 100 percent to close to zero percent. If the Entitlement demonstrations are to exert a large impact in returning dropouts to school, they will have to be successful in enrolling older members of the sample.

The final explanatory variables in this specification relate to family background and living arrangements: whether the youth is living with neither natural parent, the natural mother only, the natural father only, or both natural parents; and parents' education, coded as a continuous variable according to the highest grade attained. These variables are correlated with a number of unmeasured aspects of family resources and needs, with parents' education acting as a measure of permanent family income (expected to be positively associated with youth retention in school), while we expect that youths living with both natural parents are more likely to be in school than those missing at least one natural parent.

Both expectations derive support from Table A.1. All three categories of family living arrangements show significantly lower school enrollment rates than when both natural parents are present, and the pattern of effect is as expected. The greatest effect occurs when neither natural parent is present, followed by natural mother only and then natural father only. Also, parents' education is positively associated with school enrollment, with a reasonably strong effect in evidence.

Moving now to the school-year employment equation, effects again are significant and as expected. However, none are as large as the age effects and white/black effect in the school enrollment equation. Women are significantly less likely than men, and both whites and Hispanics are significantly more likely than blacks, to have been employed during the 1977-78 school year. Large site effects are in evidence, but we now find Baltimore above the other sites rather than in the middle as before. Baltimore exhibits the highest school-year employment rate, net of the other dependent variables. Both Mississippi sites, Cleveland, and Cincinnati are very significantly below the Baltimore rate.

Age is found to exert a strong positive effect on employment propensities during the school year. Living other than with both natural parents also increases employment propensities, but this effect begins to approach significance only for those youth living with neither natural parent. Parents' education is positively associated with employment during the school year, but the effect is not significant.

To summarize the results thus far, a number of explanatory variables, by pushing school enrollment and employment during the school year in opposite directions, create a gross negative relationship between them. The most powerful of these is age, which is negatively associated with school enrollment and positively associated with school-year employment. Being white or Hispanic as opposed to black, in Cleveland or Mississippi as opposed to Baltimore, or from a situation in which neither natural parent is present as opposed to both parents being present increases the likelihood that an individual will tend to specialize in either school or work. In addition, being female decreases school-year employment propensities while leaving enrollment unaffected, being in Denver, Cincinnati, or Louisville as opposed to Baltimore decreases both enrollment and work, and having a better educated parent increases both enrollment and work.

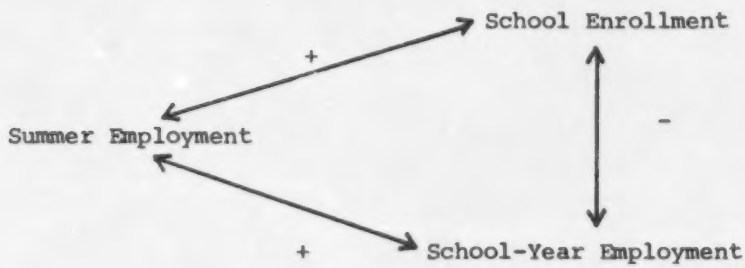
The determinants of summer employment resemble those for school-year employment, with some exceptions. Once again, females are significantly less likely than males to be employed, but for the summer we find that net racial employment differences are very much diminished. Similarly, site differences, while still significant in many cases, show different patterns than were in evidence for school-year employment. Thus, Denver, Phoenix, Cincinnati, Cleveland, and the Mississippi control sites show significantly higher net summer employment than Baltimore, with only the Mississippi pilot showing a significantly lower rate. Age still shows a significant positive effect upon employment, but the effect of living arrangements and parents' education upon summer employment is essentially nonexistent.

Dependent variable interaction terms are of particular interest, because they show the direction and significance of the correlations which remain between each pair of dependent variables once the explanatory variables and the remaining dependent variable have been (statistically) held constant. They therefore measure the extent to which pairs of dependent variables are

net substitutes or complements for one another, and thus describe the consequences for two of these variables of a "pure" (other things held constant) shift in the third variable. Thus, the fact that Table A.1 shows all three terms to be statistically significant indicates that, as hypothesized, the behaviors measured by these dependent variables are strongly related, even after individuals are (statistically) caused to be identical on the explanatory variables. School enrollment and school year employment are negatively related, while summer employment is positively related to each. These results may be interpreted as follows. A youth who, at the end of spring 1977 decided to work that summer and successfully found employment, became, by virtue of that experience, more likely to be employed during the 1977-78 school year. Also by virtue of that experience he was more likely to be enrolled in school during 1977-78, but this effect was diminished if he was actually employed during that school year. (See Figure A.2 for a schematic representation of these relationships.)

FIGURE A.2

NET (OF EXOGENOUS EXPLANATORY VARIABLES)
RELATIONSHIPS AMONG THE DEPENDENT VARIABLES



Summarized in a few words, these results say that employment is correlated with itself over time, that employment and school enrollment are net substitutes at a given point in time, and that this substitution is somewhat mitigated by the fact that summer employment bears a net positive association to school enrollment. The impact of the Entitlement demonstrations will depend, in part, upon the extent to which they alter these relationships.

Estimates With Separate Equations According to Highest Grade Attained

The highest grade an individual has attained in school can be expected to directly affect school enrollment and job holding at future times, and can, as well, be expected to alter the effects that other explanatory variables exert upon these propensities. This is because school progress brings graduation nearer; alters the scope, nature, and time demands of schoolwork; increases the individual's desirability as a potential hire; and in these, as well as other ways, affects the costs and benefits available from job search or concentration on schooling. Furthermore, progress in school is correlated with a host of unmeasured variables (tastes for school vs. work, abilities of various sorts, parental income and other resources and background characteristics) which also affect costs and potential returns from job search and schooling. Accordingly, separate prediction equations for the dependent variables are estimated according to the highest grade the individual has attained by the close of the 1976-77 school year. These are not reduced-form calculations, since highest grade attained is an endogenous variable which would be jointly determined with school enrollment and work experience in any life cycle model of school/work decision-making. Nevertheless, the conditional probability statements which emerge from these calculations are readily interpretable, and provide a potentially useful decomposition of school progress and enrollment. That is, the coefficients from these equations yield enrollment and employment propensities for subgroups of the sample at different stages of school progress, and these could be used in illustrative calculations to advance these sub-populations through the grade hierarchy to graduation or dropout status.

The age variable is omitted from these calculations, both because this simplifies the probabilistic interpretation just mentioned, and also because age is correlated with many endogenous variables, thereby complicating interpretation. In our final set of calculations (reported in the following section) separate equations are once again estimated according to categories of highest grade attained, but there we include age and lagged values of school enrollment and work experience as explanatory variables.

Table A.2 summarizes the coefficient estimates for those who had not attained 9th grade by the close of the 1976-77 school year; Table A.3

TABLE A.2

SUMMARY* OF NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. REDUCED FORM SPECIFICATION, AGE VARIABLE EXCLUDED. THE SAMPLE: HIGHEST GRADE ATTAINED $\leq$ 8th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Female versus Male	- (3.97)	- (2.40)	- (4.49)
White versus Black	- (8.71)	+ (2.75)	- (0.94)
Hispanic versus Black	- (3.33)	+ (0.72)	- (0.57)
Denver versus Baltimore	+ (2.46)	- (0.52)	+ (1.59)
Phoenix versus Baltimore	+ (0.20)	- (0.56)	+ (1.59)
Cincinnati versus Baltimore	+ (0.51)	- (3.31)	+ (2.25)
Louisville versus Baltimore	+ (1.97)	- (1.42)	+ (0.56)
Cleveland versus Baltimore	+ (4.13)	- (2.29)	+ (3.31)
Mississippi Pilot versus Baltimore	+ (1.50)	- (2.80)	- (0.01)
Mississippi Control versus Baltimore	+ (1.90)	- (3.39)	+ (2.80)
Neither Natural Parent versus Both Natural Parents	- (1.45)	+ (0.83)	+ (0.06)
Natural Mother Only versus Both Natural Parents	- (2.96)	- (0.40)	- (0.63)
Natural Father Only versus Both Natural Parents	- (1.34)	- (1.29)	- (0.12)
Parents Education	+ (1.85)	+ (0.57)	+ (0.06)

Bivariate Interactions:

School Enrollment, School Year Employment - (2.25)
School Enrollment, Summer Employment - (0.58)
School Year Employment, Summer Employment + (7.78)

*We report the sign of the net effect; t-statistics are in parentheses. See Appendix C for a complete report of all coefficient estimates.

TABLE A.3

SUMMARY* OF NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. REDUCED FORM SPECIFICATION, AGE VARIABLE EXCLUDED. THE SAMPLE: HIGHEST GRADE ATTAINED = 9th, 10th or 11th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Female versus Male	+ (2.56)	- (4.88)	- (9.20)
White versus Black	- (9.49)	+ (7.34)	+ (1.31)
Hispanic versus Black	- (4.28)	+ (1.42)	+ (1.56)
Denver versus Baltimore	- (3.96)	- (1.75)	+ (5.96)
Phoenix versus Baltimore	- (3.13)	- (0.30)	+ (3.91)
Cincinnati versus Baltimore	- (3.14)	- (6.95)	+ (4.21)
Louisville versus Baltimore	- (5.88)	- (4.37)	- (1.59)
Cleveland versus Baltimore	- (0.59)	- (7.37)	+ (8.08)
Mississippi Pilot versus Baltimore	+ (5.34)	- (7.30)	- (5.43)
Mississippi Control versus Baltimore	+ (3.56)	- (6.76)	+ (2.53)
Neither Natural Parent versus Both Natural Parents	- (9.80)	+ (1.68)	- (0.85)
Natural Mother Only versus Both Natural Parents	- (4.31)	+ (0.11)	+ (1.40)
Natural Father Only versus Both Natural Parents	- (2.31)	+ (0.93)	+ (0.23)
Parents Education	+ (7.11)	+ (1.01)	+ (0.04)

Bivariate Interactions:

School Enrollment, School Year Employment - (6.80)
School Enrollment, Summer Employment + (5.52)
School Year Employment, Summer Employment +(14.04)

*We report the sign of the net effect; t-statistics are in parentheses. See Appendix C for a complete report of all coefficient estimates.

summarizes the results for those who had completed exactly nine, ten or eleven grades by that time. For this latter group, we estimated separate equations according to the exact grade in question, but the coefficients were sufficiently similar to make it possible to pool these individuals and take advantage of the resulting greater degrees of freedom. (That is, the major difference occurs for those who had attained less than nine grades, compared with everyone else.) These pooled results are reported in Table A.3. However, complete results, separately for each grade attainment level (ninth, tenth, and eleventh), are provided in Tables A.7, A.8, and A.9 and will occasionally be referred to in the text.

Tables A.2 and A.3 contain few real surprises, but they do provide interesting elaborations and extensions of results already observed. As we review these it is well to remember that the sample size for Table A.2 is only one third that for Table A.3, and as a consequence the t-statistics for the latter table are inflated over those for the former.

Among those who have attained fewer than nine grades, females are less likely than males to enroll in school the following year. This sex differential reverses among those who have attained nine or more grades, and the two effects balance overall (as shown by the non-significant t-statistic for this coefficient in Table A.1). Since approximately six percent of the sample has already had at least one child (see Chapter 3), and women with this experience are likely to be over-represented among youth who have attained fewer than nine school grades, this teenage fertility most likely represents at least a partial explanation of the sex differential in school enrollment for this group. This possibility, and its consequences for early life-cycle decisions by low-income females, will be pursued in future reports.

Continuing our examination of these tables, we find that the net lower school enrollment and higher school-year employment of whites as compared with blacks holds for all levels of grade attainment, as does the lower net school enrollment rate of Hispanics as compared with blacks and the non-significance of a race effect for summer employment. Site effects are still significant, with those of Table A.3 most closely resembling those of Table A.1. The relatively powerful and regular net effects, by which the Mississippi sites report higher school enrollment rates and lower school-year employment rates than the other sites, continue to be supported by these calculations.

Family background characteristics also continue important in these results, although statistical significance is achieved only for the school enrollment equation.

Bivariate interactions continue as before, with one important exception. This exception is that for those who have attained fewer than nine grades, the positive net interaction between summer employment and school enrollment disappears. As a result, the negative effect exerted on school enrollment by summer employment acting through its correlation with school-year employment is not weakened, and a mechanism is provided to at least partially account for the "persistence in state" of those who are making less than regular progress in school.

The rather large difference in the school enrollment/summer employment interaction for those who have attained fewer than nine grades as compared with the rest of the sample is all the more striking in view of the resounding manner in which the negative relationship between school enrollment and school-year employment, and the positive relationship between summer employment and school-year employment, is confirmed for each of these groups. The regularity of these results (see Appendix C for estimates separately by grade) justifies a good deal of confidence in their truth.

A.3 Net Effects and Bivariate Interactions: Dynamic Models

Tables A.4 and A.5 repeat the calculations of Tables A.3 and A.5 but with a dummy variable for whether or not the youth was enrolled in school during the 1976-1977 school year, a dummy variable for whether or not the youth was employed during Spring, 1977, and age, added to the explanatory variables. (The complete set of calculations are provided in Appendix C.)

This dynamic specification measures the effect of school enrollment and employment upon subsequent school enrollment and employment, separately according to highest grade attained. It also measures the effects of exogenous variables (such as sex, race, etc.) net of their effect upon schooling and work during the 1976-77 school year. Since, as has been seen in Chapter 6 of this report, over-time correlation is a significant force affecting work and schooling behavior, we may expect that once lagged values of school enrollment and work experience are controlled, the effects of exogenous

TABLE A.4

SUMMARY* OF NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. DYNAMIC SPECIFICATION. SAMPLE: HIGHEST GRADE ATTAINED $\leq$ 8th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Female versus Male	- (3.41)	- (1.86)	- (3.75)
White versus Black	- (6.19)	+ (2.10)	- (1.23)
Hispanic versus Black	- (1.36)	+ (0.51)	- (0.66)
Denver versus Baltimore	- (0.20)	- (0.35)	+ (0.37)
Phoenix versus Baltimore	+ (0.12)	- (0.46)	+ (1.24)
Cincinnati versus Baltimore	+ (0.17)	- (2.81)	+ (1.43)
Louisville versus Baltimore	+ (0.61)	- (1.24)	+ (0.02)
Cleveland versus Baltimore	+ (2.65)	- (1.69)	+ (2.76)
Mississippi Pilot versus Baltimore	+ (2.78)	- (2.82)	- (1.16)
Mississippi Control versus Baltimore	+ (2.15)	- (3.49)	+ (0.87)
Neither Natural Parent versus Both Natural Parents	- (0.17)	+ (0.77)	+ (0.[illegible])
Natural Mother Only versus Both Natural Parents	- (3.46)	- (0.02)	- (0.03)
Natural Father Only versus Both Natural Parents	- (1.19)	- (1.02)	+ (0.25)
Parents Education	+ (1.24)	+ (0.42)	- (0.44)
Enrolled in School, 76-76 versus Not Enrolled	+ (12.47)	- (0.76)	+ (0.13)
Employed, Spring, 1977 versus Not Employed	- (2.87)	+ (4.67)	+ (10.29)
Age	- (7.58)	+ (2.02)	- (0.71)

Bivariate Interactions:

School Enrollment, School Year Employment	+	(0.94)
School Enrollment, Summer Employment	+	(1.32)
School Year Employment, Summer Employment	+	(4.54)

*We report the sign of the net effect; t-statistics are in parentheses. See Appendix C for a complete report of all coefficient estimates.

TABLE A.5

SUMMARY* OF NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. DYNAMIC SPECIFICATION. THE SAMPLE: HIGHEST GRADE ATTAINED = 9th, 10th, or 11th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Female versus Male	+	-	-
	(1.58)	(4.83)	(7.43)
White versus Black	-	+	-
	(6.35)	(7.82)	(0.58)
Hispanic versus Black	-	+	+
	(3.47)	(1.96)	(2.21)
Denver versus Baltimore	-	-	+
	(3.36)	(2.18)	(3.99)
Phoenix versus Baltimore	-	-	+
	(2.74)	(0.38)	(2.49)
Cincinnati versus Baltimore	-	-	+
	(2.15)	(8.09)	(2.38)
Louisville versus Baltimore	-	-	-
	(4.53)	(5.16)	(2.50)
Cleveland versus Baltimore	-	-	+
	(1.48)	(8.31)	(7.17)
Mississippi Pilot versus Baltimore	+	-	-
	(2.71)	(9.11)	(6.83)
Mississippi Control versus Baltimore	+	-	+
	(2.24)	(7.64)	(0.31)
Neither Natural Parent versus Both Natural Parents	-	+	-
	(4.62)	(1.68)	(0.69)
Natural Mother Only versus Both Natural Parents	-	+	+
	(3.36)	(0.75)	(2.74)
Natural Father Only versus Both Natural Parents	-	+	+
	(1.54)	(1.36)	(0.89)
Parents Education	+	+	+
	(4.47)	(1.64)	(0.87)
Enrolled in School, 76-76 versus Not Enrolled	+	+	+
	(24.31)	(0.33)	(6.85)
Employed, Spring, 1977 versus Not Employed	-	+	+
	(2.58)	(8.22)	(19.97)
Age	-	+	+
	(13.32)	(5.31)	(4.02)

Bivariate Interactions:

School Enrollment, School Year Employment	- (2.97)
School Enrollment, Summer Employment	+ (4.37)
School Year Employment, Summer Employment	+ (9.68)

*We report the sign of the net effect; t-statistics are in parentheses. See Appendix C for a complete report of all coefficient estimates.

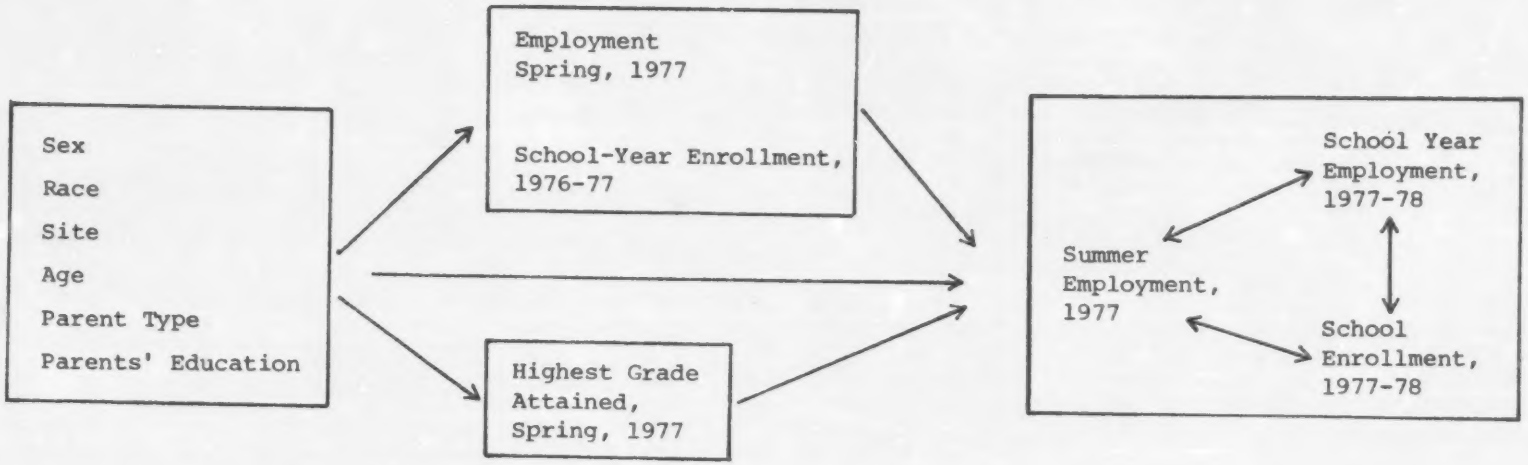
variables will decrease or vanish altogether. That is, it may be that the effects of exogenous variables upon the dependent variables act predominantly through their effects upon the lagged values. (See Figure A.3 for a schematic representation of the dynamic model.) Whether or not this is the case will be discovered in Tables A.4 and A.5.

We immediately notice that the lagged schooling and employment variables are powerful predictors, and exert rather regular effects. Thus, being employed during Spring, 1977, exerts a powerful positive effect upon employment during the summer and the succeeding school year and a (weaker) negative effect upon enrollment during the succeeding school year, and this is the case irrespective of grade level. School enrollment during 1976-77 exerts a strong positive effect upon school enrollment during the 1977-78 school year, but no effect upon employment during that school year, a result which also holds for all levels of grade attainment. However, the effect of school enrollment during 1976-77 upon employment during the summer of 1977 does depend upon grade attainment: there is no effect for those who have attained fewer than nine grades, but there is a significant positive effect for those who have gone further in school. In summary, we find that other things being equal (e.g. with controls for a host of exogenous variables), school enrollment positively affects future school enrollment but not future school-year employment. School-year employment positively affects future employment (summer and school-year) but negatively affects future school enrollment. However, the final working through of these relationships awaits consideration of the bivariate interactions among the dependent variables, results we shall get to shortly. Implications of all this for school enrollment and employment propensities are presented in a concrete and straightforward cross-tabular fashion in Appendix B.

Continuing with Tables A.4 and A.5 we see that, contrary to expectation, the exogenous variables continue to exert strong effects, even with controls for lagged values of schooling and work. Thus, independent of grade attainment, women are less likely than men to be employed, but the school enrollment sex differential reverses sign according to grade level. Whites and Hispanics are less likely to be enrolled in school, and more likely to be employed during the school year than are blacks, while summer employment race differentials are negligible. Site effects are still significant on the

FIGURE A.3

A DYNAMIC MODEL OF EMPLOYMENT AND SCHOOL ENROLLMENT



whole, and resemble those already reported. As before, family characteristics exert strongest effects for those who have completed at least nine school grades, and age continues to be a powerful predictor, bringing school enrollment down and employment propensities up.

As for the bivariate interactions, they generally resemble those previously reported, with one (small) adjustment brought on by the presence of the lagged schooling and work variables. Thus, summer employment continues to be positively associated with school-year employment and school enrollment. In addition, school year employment and school enrollment are negatively associated during 1977-78 among those making regular progress in school (grade attainment >8th). However, this negative association vanishes for those who have attained fewer than nine grades. This is apparently in partial compensation for the strong negative effect exerted upon school enrollment during 1977-78 by employment during Spring, 1977 for this group. (The strength of this effect is shown by the fact that the relevant t-statistic is almost identical in Tables A.4 and A.5, despite the fact that the value for Table A.5 is inflated by a sample three times as large.) The relative magnitude of the resulting effects will be clarified in Appendix B.

A.4 Summary

The multivariate analysis of this appendix and Appendix B clearly demonstrates that school enrollment and youth labor supply decisions are simultaneously determined. Prior decisions and experience in each of these spheres affect future decisions and experience. Finally, schooling and work decisions are competitive for a person's time during the school year but much less so during the summer. Thus, the behavioral relationships governing use of time will vary between the two seasons.

These general relationships are modeled within a multivariate logistic framework which analyzes several binary dependent variables simultaneously and fully accounts for the interactions among them. This is done via a conventional reduced form specification and dynamically, allowing for lagged values of the dependent variables to aid in the prediction of future values of these variables. The basic explanatory variables in this analysis are sex, race, age, site, parents' education, family structure and previous

school attainment or employment activity. Models are estimated to simultaneously predict school enrollment, school year employment and summer employment.

With respect to school enrollment, there are no overall sex differences. However, blacks are much more likely to be enrolled than white or Hispanic youth. Age is the strongest determinant of school enrollment, while the effects of site are mixed.

More importantly, there is a significant net negative relationship between school year enrollment and school year employment. There is also a strongly net positive relationship between school enrollment and summer employment and between school year employment and summer employment. These patterns differ somewhat when one separates the sample by highest grade attained. For those who have only attained eight grades or less, the significant interaction between school enrollment and summer employment disappears. However, the interaction patterns for those who have attained ninth, tenth, or eleventh grade are the same as for the total sample.

The school year and summer employment models show females employed less than males, older youth working more than younger individuals, and whites employed more than blacks in the school year but not in the summer. Family structure and parents' education exert no significant effect upon employment in either season. These patterns also hold for the models which separate the sample by highest grade attained.

Holding previous schooling and employment behavior constant while predicting current schooling and employment alters the patterns of some coefficients. Thus, for those who have attained no more than eight school grades, there remains only a positive interaction between school year employment and summer employment. Interactions between schooling and employment disappear. However, for those who have attained ninth grade or higher, the net interactions of this dynamic specification are the same as for those estimated for the reduced form model of the entire sample--a much less complex characterization of behavior.

Clearly, eligible youth who have attained eighth grade or less behave differently from those with higher educational attainment. The implication of this for the Entitlement demonstrations and their net program effects is not yet known. However, the Entitlement demonstrations

are predicated on the principle that there is a net positive relationship between schooling in one period and employment in the next. In addition, other data suggest that schooling combined with employment is positively associated with future schooling and employment. If these associations are weak among those with low grade attainment, the program may not aid them. This group has the most severe disabilities. However, those with only moderate schooling and employment disabilities, not to mention those with no disabilities, may be benefited by the Entitlement demonstrations.

Appendix B: HOW THE JOINT DISTRIBUTION OF SCHOOL ENROLLMENT AND WORK EXPERIENCE SHIFTS AS A CONSEQUENCE OF THE EXPLANATORY VARIABLES

B.1 Introduction and Overview

Appendix A presented the basic model of youth school enrollment and job-holding behavior and reported the resulting parameter estimates. These enabled us to summarize the net effects of each of the explanatory variables upon each of the dependent variables, as well as the correlations remaining among pairs of these dependent variables after the effects of the other variables had been removed. However, since the models are highly non-linear, some arithmetic manipulation is required in order to move from parameter estimates to predicted probabilities for the dependent variables. This chapter reports the results of these manipulations, permitting a display, in tabular form, of the shifts produced in the joint distribution of school enrollment and work experience by changes in the explanatory variables. The accompanying tables present a very clear view of the magnitude of effect associated with each of these variables.

Three tables are presented in this appendix. Each elaborates upon the implications of one set of calculations presented in Appendix A. Thus, Table B.1 summarizes the effects of sex, race, site, parent type, parents education, and age, when these are the only explanatory variables, so that the specification is a "reduced form" (that is, the explanatory variables are such as to act upon schooling and work experience without themselves being acted upon in return). Thus, Table B.1 is constructed from, and is an aid in the interpretation of, Table A.1. (See also Appendix Table A.2.)

Similarly, Table B.2 is derived from the calculations undertaken separately according to highest grade attained, with sex, race, site, parent type, and parents education as the explanatory variables (age is excluded). These coefficient estimates are summarized in Tables A.2 and A.3, and fully reported in Appendix Tables C.2-C.6.

They provide a view of job-holding and school enrollment propensities for different demographic subgroups at different levels of grade progress. Table B.2 employs two such subgroups to illustrate the patterns and magnitudes involved.

Table B.3 corresponds to the dynamic specification summarized in Tables A.4 and A.5 and fully reported in Appendix Tables C.7-C.11. Here, separate equations are estimated according to highest grade attained. The explanatory variables include age, whether enrolled in school during 1976-77, and, whether employed during Spring, 1977. In this case, interest centers on the effects of the lagged values of school enrollment and employment, since these detail the preprogram propensities of school dropouts to re-enroll, in-school youth to remain enrolled. They also show how these propensities are altered by job-holding during the school year.

How the Tables are Constructed

The models of behavior have provided prediction equations containing coefficients to be estimated, using baseline data on Entitlement eligibles. As a result, predicted school enrollment and employment propensities can be generated for any particular combination of values of the explanatory variables. Since each such combination corresponds to a different demographic subgroup, these estimated school enrollment and employment probabilities could, in principle, be provided for every such group. However, for Table A.1 alone, there are 2 (male, female) x 3 (white, black, Hispanic) x 8 (one for each site) x 4 (parent type) x 4 (to capture some of the variation in parents education) x 4 (to capture some of the variation in age) = 3072 such subgroups. Instead of presenting probabilities for each of these groups, the focus here is upon one of these subgroups, chosen as a "reference population" illustrating how enrollment and employment propensities shift when any one of the explanatory variables is changed. The calculations are exact for the demographic subgroups chosen, and the general patterns and orders of magnitude they detail can be extrapolated to predictions

for subgroups not chosen. However, these calculations are not exhaustive. They illustrate results reported in Appendix A, and extend the findings of Chapters 4 and 5, but they are only a subset of the tables which could be generated from our coefficient estimates.

B.2 Reduced-Form Results

The reference population chosen for Table B.1 is black males, living in Baltimore, 17 1/2 years of age, who are living with both natural parents and whose parents educational level is ninth grade. For this group, 6.7 percent were not employed during the summer and neither employed nor enrolled in school during the 1977-78 school year. In addition, 34 percent were enrolled in school but not employed during either the summer or the school year; 13.3 percent were both enrolled and employed during the school year but not employed during the summer, etc. When these proportions are summed, the marginal distributions show that 84.8 percent of this sub-population was enrolled during the 1977-78 school year, 39.6 percent was employed during this school year, and 42.6 percent was employed during the summer.

Panel B.1.2 reports similar probabilities for the population in which the sex variable has been changed to "female." That is, enrollment and employment propensities are for black females, living in Baltimore, 17 1/2 years of age, who are living with both natural parents and whose parents educational level is ninth grade. The remainder of the table is similarly constructed: the effects due to each explanatory variable are illustrated by changing the categories of that variable alone (e.g., panel B.1.3 describes the enrollment and employment of white males, living in Baltimore, 17-1/2 years of age, who are living with both natural parents and whose parents' educational level is ninth grade).

We recall from Table A.1 that overall the net female versus male effect is insignificant for school enrollment, but involves significant decreases in summer and school-year employment rates. These net effects, when combined with bivariate interactions which

TABLE B.1

FITTED SCHOOL ENROLLMENT AND EMPLOYMENT PROBABILITIES, REDUCED-FORM SPECIFICATION

B.1.1 Reference Population: Male, Black, Baltimore, 17½ Years of Age, Living With Both Natural Parents, Parents' Education = 9th Grade.

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978				Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
		NO	YES	NO	YES			
NO	NO	6.7	3.5	2.0	3.0	84.8	39.6	42.6
YES	YES	34.0	13.3	17.7	19.9			

B.1.2 Females

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978				Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
		NO	YES	NO	YES			
NO	NO	9.0	3.1	1.4	1.5	84.9	27.7	26.7
YES	YES	48.4	12.8	13.5	10.3			

B.1.3 Whites

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978				Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
		NO	YES	NO	YES			
NO	NO	11.3	13.3	3.7	1[illegible]	59.3	61.2	46.6
YES	YES	15.2	13.6	8.6	21.5			

B.1.4 Hispanics

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978				Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
		NO	YES	NO	YES			
NO	NO	10.6	7.0	3.7	7.0	71.7	47.0	46.3
YES	YES	24.1	12.0	14.6	20.9			

TABLE B.1 (Cont.)

B.1.5 Denver

Enrolled All Year, 1977-78	Employed, Fall 1977/Spring 1978	Employed, Summer 1977: NO	Employed, Summer 1977: YES
NO	NO	5.6	4.0
	YES	2.5	5.2
YES	NO	21.7	27.3
	YES	7.3	26.5

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
82.7	41.5	62.9

B.1.6 Phoenix

Enrolled All Year, 1977-78	Employed, Fall 1977/Spring 1978	Employed, Summer 1977: NO	Employed, Summer 1977: YES
NO	NO	6.9	4.2
	YES	3.6	6.2
YES	NO	21.8	23.0
	YES	8.5	25.8

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
79.1	44.1	59.2

B.1.7 Cincinnati

Enrolled All Year, 1977-78	Employed, Fall 1977/Spring 1978	Employed, Summer 1977: NO	Employed, Summer 1977: YES
NO	NO	7.8	4.0
	YES	1.8	2.6
YES	NO	33.5	29.7
	YES	5.8	14.7

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
83.8	24.9	51.1

B.1.8 Louisville

Enrolled All Year, 1977-78	Employed, Fall 1977/Spring 1978	Employed, Summer 1977: NO	Employed, Summer 1977: YES
NO	NO	12.9	3.4
	YES	3.7	2.8
YES	NO	39.5	18.1
	YES	8.5	11.2

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
77.3	26.1	35.4

TABLE B.1 (Cont.)

B.1.9 Cleveland

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		4.5	0.7	3.9	1.9
YES		27.7	3.5	42.4	15.3

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
88.9	21.4	63.5

B.1.10 Mississippi Pilot

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		6.0	0.9	1.0	0.4
YES		61.7	7.1	17.2	5.7

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
91.8	14.2	24.3

B.1.11 Mississippi Control

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		4.9	0.7	2.4	1.0
YES		40.6	4.7	34.3	11.3

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
90.9	17.7	49.0

B.1.12 Living with Neither Natural Parent

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		12.5	8.0	3.3	6.0
YES		27.3	13.2	12.4	17.2

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
70.1	44.4	38.9

TABLE B.1 (cont.)

B.1.13 Living with Natural Mother Only

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		9.4	4.9	3.0	4.5
YES		30.3	11.8	17.0	19.1

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
78.2	40.3	43.6

B.1.14 Living with Natural Father Only

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		10.1	5.4	3.0	4.6
YES		30.5	12.4	15.7	18.3

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
76.9	40.7	41.7

B.1.15 Parents Completed 10th Grade

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		6.2	3.3	1.9	2.8
YES		34.0	13.6	17.8	20.4

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
85.9	40.1	42.9

B.1.16 Age = 16

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		2.9	1.0	0.6	0.7
YES		48.3	13.3	18.5	14.6

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
94.8	29.6	34.5

TABLE B.1 (cont.)

B.1.17 Age = 17

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	5.2	2.4	1.4	1.8
	YES	39.0	13.6	18.3	18.3

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
89.2	36.1	39.9

B.1.18 Age = 18

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	8.5	4.9	2.8	4.7
	YES	28.8	12.7	16.6	21.0

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
79.1	43.3	45.1

B.1.19 Age = 19

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	12.1	8.9	4.9	10.5
	YES	18.7	10.4	13.2	21.1

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
63.5	50.9	49.7

inversely relate school enrollment and school-year employment and positively relate summer employment to each, result in insignificant overall male/female enrollment rate differences (84.8 percent versus 84.9 percent), a 12 percentage point school-year employment rate deficit for females, and a 16 percentage point summer employment rate deficit for females. Looking within the 8-cell tabulation, we see that the largest male/female differences occur for the categories: enrolled in school but at work in neither period, and enrolled in school and at work both periods. Females show a 14 percentage point surplus for the former category, and a 10 percentage point deficit for the latter.

Panel B.1.3 displays the consequences of being white as opposed to black (other characteristics held constant). Recalling the net racial differentials in Table A.1 we are not surprised to find that white school enrollment rates are 25 percentage points lower than those for blacks, while school-year employment rates are 22 percentage points higher for whites. Summer employment rates are 4 percentage points higher for whites, a result at least partly due to the bivariate correlations among the dependent variables. Interestingly, we see that net racial effects, combined with bivariate interactions, are such as to cause blacks to concentrate on school enrollment (84.8 percent) as compared with school-year employment (39.6 percent) while whites engage in these activities to about equal extents (59 percent and 61 percent).

Looking within this panel, we find whites more heavily concentrated in all four of the not enrolled in school categories. By comparison, blacks are particularly heavily concentrated in the enrolled in school but at work neither period and the enrolled in school, employed during the summer, but not employed during the school-year category.

Panel B.1.4 shows the effects of being Hispanic to lie between those for blacks and whites. This is the case for school enrollment and school-year employment, with the Hispanic summer employment rate being almost identical to that for whites. Looking

within the 8-cell table, the greatest white/Hispanic difference lies among those enrolled in school but at work during neither period. Hispanics show a 9 percentage point surplus over whites in this category.

Panels B.1.5 - B.1.11 detail the consequences of residence in each of the remaining seven sites for the enrollment and employment propensities of the comparison population. (To repeat, these are black males, 17-1/2 years of age, living with both natural parents, and with parents' education equal to ninth grade.) Using Baltimore as a reference, school enrollment rates vary as much as 7 percentage points in either direction: down to 77.3 percent for Louisville and up to 91.8 percent for the Mississippi pilot site. School-year employment rates show a good deal of downward movement (down as far as 14.2 percent in the Mississippi pilot) but only small upward movement (to 44.1 percent for Phoenix). Clearly Baltimore has one of the highest school-year employment rates. Summer employment shows the greatest inter-site variation of all: from a low of 24.3 percent in the Mississippi pilot to a high of 63.5 percent in Cleveland. Interestingly, the Cleveland rate is accounted for by an unusually high percentage of youth who were enrolled in school during 1977-78, worked during the summer of 1977,and did not work during the 1977-78 school year, a rather different pattern than is in evidence for Denver and Phoenix, the other sites with high summer employment rates. It seems likely that employment in these sites is being provided by rather different mixes of public and private sector jobs, a possibility to be explored in future reports.

Panels B.1.12 - B.1.14 display the consequences of living other than with both natural parents. In comparison with the reference population, this can cause school enrollment to decline by as much as 14.7 percentage points; school-year and summer employment also fluctuate, but by smaller amounts. Panel B.15 shows that increasing parents education by one grade level drives each of the dependent variables up slightly, but the effect is small. (Of course, permitting wider variation in this explanatory variable would produce larger effects.)

Panels B.1.16 - B.1.19 show the changes which accompany aging for the reference population. As age increases from 16 to 19, school enrollment propensities drop from 94.8 percent to 63.5 percent; school-year employment propensities increase from 29.6 percent to 50.9 percent; and summer employment propensities increase from 34.5 percent to 49.7 percent. Within the 8-cell table, the largest change occurs for the propensity to enroll in school and not work at all, which decreases from 48.3 percent tc 18.7 percent.

B.3 The Effects of Grade Attainment

Table B.2 is constructed from the specification involving separate equations according to highest grade attained, with age excluded from the explanatory variables. (These results were summarized in Tables A.3 and A.5.) Here the goal is to simply describe the process of grade progression by investigating enrollment and employment propensities for different sub-populations as they attain successive levels of school progress. Of course, many sub-populations could be scrutinized: the ones chosen for illustrative purposes here are males in Baltimore, living with both natural parents, with parents' education equal to ninth grade, both blacks and whites.

Panel B.2A shows that for blacks, school enrollment propensities increase with highest grade attained, from 73.7 percent to 88.3 percent, while school-year employment propensities move irregularly but increase from 38.7 percent to 45.1 percent, and summer employment propensities increase from 35.1 percent to 62.0 percent. Panel B.2B shows the identical pattern of movement for whites, but one which occurs at rather different levels. Thus, for whites we find school-year employment propensities increasing from 57.3 percent to 69.7 percent, and summer employment propensities increasing from 37 percent to 67.4 percent. Within the 8-cell table, the largest changes occur in the propensity of whites to be engaged in all three dependent-variable activities: school enrollment, school-year employment, and summer employment. The percent doing this increases more than five-fold, from 8 percent to 42.1 percent, as we move to higher

TABLE B.2

FITTED SCHOOL ENROLLMENT AND EMPLOYMENT PROBABILITIES FOR THE EFFECT OF RACE AND PREVIOUS GRADE ATTAINMENT. REFERENCE POPULATION: MALE, BALTIMORE, LIVING WITH BOTH NATURAL PARENTS, PARENTS' EDUCATION = 9th GRADE

B.2A. Blacks

B.2A.1 Highest Grade Attained $\leq$ 8

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	10.7	5.3	3.5	6.8
	YES	36.5	12.3	10.6	14.2

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
73.7	38.7	35.1

B.2A.2 Highest Grade Attained = 9

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	9.5	4.7	3.9	5.3
	YES	36.0	10.9	16.2	13.4

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
76.5	34.3	38.8

B.2A.3 Highest Grade Attained = 10

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	5.5	4.8	1.6	3.7
	YES	30.3	17.6	14.2	22.3

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
84.5	48.4	41.8

B.2A.4 Highest Grade Attained = 11

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	2.8	2.6	1.7	4.6
	YES	23.7	8.9	26.7	29.0

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
88.3	45.1	62.0

TABLE B.2 (cont.)

B.2B Whites

B.2B.1 Highest Grade Attained ≤ 8

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		21.0	20.1	5.4	20.5
YES		13.3	8.7	3.1	8.0

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
33.0	57.3	37.0

B.2B.2 Highest Grade Attained = 9

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		12.1	14.7	5.6	18.5
YES		15.0	11.1	7.6	15.3

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
49.0	59.7	47.0

B.2B.3 Highest Grade Attained = 10

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		5.4	12.2	2.1	12.9
YES		11.6	17.6	7.5	30.8

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
67.4	73.5	53.3

B.2B.4 Highest Grade Attained = 11

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		2.2	5.4	1.3	9.6
YES		12.4	12.6	14.3	42.1

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
81.5	69.7	67.4

levels of grade attainment. (Note that since age is not held constant here, this represents a true average path of behavior accompanying grade progression for this group.)

It is worthwhile at this juncture to repeat that these estimated propensities can be viewed as conditional probabilities which provide a synthetic cohort decomposition[1] of the movement of individuals through the school system. That is, one can imagine that of 1,000 reference population black youth who have completed 8th grade by the end of the 1976-77 school year, 73.7 percent (737) will be enrolled all year during 1977-78, and most will pass on to the next grade, while the remainder will remain with no higher grade attained. Of those enrolled during 1977-78, most will pass on to the next grade, and of these, 76.5 percent will be enrolled all year during the following year. Meanwhile, those not enrolled during 1977-78 will still be subject to the 73.7 percent enrollment rate the following year, and so on to graduation or aging out of the sample. Of course, more elaborate models of the over-time nature of the process could be fit in order to approximate as closely as possible to the patterns shown in Table 4.2. (For work of this nature, see Meyer and Wise, 1978, among others.)

B.4 The Effects of School Enrollment and Employment During the Preceding School Year

Table B.3 is derived from the dynamic specification results, summarized in Tables A.4 and A.5. Since the greatest interest here focuses upon the consequences of enrollment during the 1976-77 school year and employment during Spring, 1977, we have arranged this table so as to show these most clearly. The reference population is black males in Baltimore, 17-1/2 years of age, living with both natural parents, and with parents education equal to ninth grade. For this group, enrollment and employment propensities are displayed separately according to highest grade attained, school enrollment during 1976-77, and employment during Spring, 1977.

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[1] A synthetic cohort decomposition is one in which grade (or age) specific probabilities at one point in time are combined to illustrate an over-time process by imagining a given number of individuals being subject to them in sequence. See text for further elaboration.

TABLE B.3

FITTED SCHOOL ENROLLMENT AND EMPLOYMENT PROBABILITIES FOR THE EFFECT OF PREVIOUS GRADE ATTAINMENT, SCHOOL ENROLLMENT, AND EMPLOYMENT EXPERIENCE. REFERENCE POPULATION SAME AS TABLE 8.1.1.

B.3A Not Enrolled all Year, 1976-77; Not Employed, Spring, 1977

B.3A.1 Highest Grade Attained $\leq$ 8

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO		43.3	18.9	8.5	9.3
YES		9.2	5.0	2.5	3.4

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
20.0	36.5	23.6

B.3A.2 Highest Grade Attained = 9

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO		43.5	15.6	8.2	6.3
YES		16.9	4.4	3.3	1.8

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
26.4	28.2	19.6

B.3A.3 Highest Grade Attained = 10

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO		27.1	20.4	3.1	5.0
YES		20.7	13.6	4.1	6.0

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
44.4	45.0	18.2

B.3A.4 Highest Grade Attained = 11

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO		22.9	15.5	4.0	5.9
YES		26.5	10.2	8.2	6.9

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
51.7	38.5	24.9

TABLE B.3 (cont.)

B.3B. Enrolled All Year, 1976-77; Not Employed, Spring, 1977

B.3B.1 Highest Grade Attained ≤ 8

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		9.1	3.2	1.8	1.6
YES		41.9	18.1	11.6	12.7

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
84.3	35.6	27.8

B.3B.2 Highest Grade Attained = 9

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		6.6	3.0	2.5	2.5
YES		42.6	14.1	16.8	11.9

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
85.4	31.5	33.7

B.3B.3 Highest Grade Attained = 10

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		2.4	1.6	0.6	0.9
YES		36.7	21.3	16.1	20.5

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
94.6	44.2	38.0

B.3B.4 Highest Grade Attained = 11

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO		YES	
		NO	YES	NO	YES
NO		1.2	0.7	0.6	0.8
YES		33.9	10.6	31.1	21.1

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
96.7	33.1	53.6

TABLE B.3 (cont.)

B.3C Not Enrolled All Year, 1976-77; Employed, Spring, 1977

B.3C.1 Highest Grade Attained ≤ 8

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	2.6	3.9	16.9	65.2
YES	NO	0.2	0.4	1.9	8.9

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
11.4	78.5	92.9

B.3C.2 Highest Grade Attained = 9

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	4.7	3.7	27.2	46.5
YES	NO	1.2	0.7	7.2	8.9

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
17.9	59.8	89.7

B.3C.3 Highest Grade Attained = 10

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	4.8	7.8	9.1	32.8
YES	NO	2.8	4.0	9.3	29.5

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
45.5	74.0	80.7

B.3C.4 Highest Grade Attained = 11

Enrolled All Year, 1977-78	Employed, Summer 1977	Employed, Fall 1977/Spring 1978			
		NO	YES	NO	YES
NO	NO	2.3	4.0	9.9	37.4
YES	NO	1.8	1.8	13.6	29.2

Enrolled All Year, 1977-78	Employed, 1977-78	Employed, Summer 1977
46.4	72.3	90.1

Table B.3A shows that those who were neither enrolled in school nor employed in the previous period display drastically depressed school enrollment rates, and this effect occurs in addition to the independent effect of grade attainment. Thus, Table B.1.1 shows an overall school enrollment rate of 84.8 percent for the reference population, while panels B.3A.1 - B.3A.4 show this rate moving from 20.0 to 51.7 as grade attainment increases.

These are illustrative preprogram school enrollment rates for program eligible youth who were out of school and not employed in the previous period. Since such youth constitute an important target group for the Entitlement demonstrations, it will be of great interest to see whether these projects succeed in raising such rates. Clearly, a great deal of progress could be made here.

Panels B.3B display enrollment and employment propensities during 1977-78 for those youth who were enrolled, but not employed, during 1976-77. We see that the enrollment rates of these youth are very high, and become even higher with increasing grade attainment: variation is from 84.3 percent to 96.7 percent. Comparison of B.3A and B.3B thus reinforces a previous finding: school enrollment shows very high over-time persistence. We may therefore expect that <u>if</u> the Entitlement demonstrations are successful in bringing out-of-school youth back to school, the positive consequences of this will persist for some time to come.

Further comparison of B.3A and B.3B shows relatively small school-year employment differences, but rather large summer employment differences at levels of grade attainment about eighth grade. Here net effects and bivariate interactions combine to significantly increase the summer employment rates of those enrolled during the previous year. Whether or not these behavioral relationships persist among Entitlement demonstration participants will be an important subject for the impact analysis to come.

Panels B.3C show the consequences of having been employed during spring, 1977, and not having been enrolled during that school year. Not surprisingly, this behavior drives school enrollment during 1977-78 dramatically downwards, while at the same time

providing quite high school-year and summer employment rates. We thus observe once again the high over-time persistence of job-holding, and the possibility of such employment occurring in association with non-involvment in school. The ability of the Entitlement demonstrations to provide an environment in which both school enrollment and job-holding coexist lies at the heart of their success or failure.

By way of briefly summarizing these results, and demonstrating the power of school enrollment and work experience during 1976-77 as predictors of behavior during the following summer and school year, Table B.4 recapitulates the marginal distributions reported in Panels B.3A - B.3C.

TABLE B.4

SUMMARY OF TABLE B.3

Highest Grade Attained	Enrolled All Year, 1977-78			Employed, 1977-78 School Year			Employed Summer, 1977		
	A	B	C	A	B	C	A	B	C
≤8	20.0	84.3	11.4	36.5	35.6	78.5	23.6	27.8	92.9
9	26.4	85.4	17.9	28.2	31.5	59.8	19.6	33.7	89.7
10	44.4	94.6	45.5	45.0	44.2	74.0	18.2	38.0	80.7
11	51.7	96.7	46.4	38.5	33.1	72.3	24.9	53.6	90.1

A = Youths not enrolled all year, 1976-77, and not employed, Spring 77

B = Youths enrolled all year, 1976-77, and not employed, Spring 77

C = Youths not enrolled all year, 1976-77, and employed, Spring 77

B.5 Summary

This appendix presents fitted cross tabulations to illustrate the effects reported in Appendix A. However, we show only a few of the several thousand calculations that might conceivably be derived from these estimated models. This is no drawback, since by focusing on enrollment and employment propensities for a "reference population," we are able to illustrate the patterns and magnitudes of effect which would be observed for any subpopulation of interest.

The estimates shown substantiate the analysis of Chapters 4 and 5. For instance, the differential school enrollment between whites and blacks for the reference population is sustained: whites are enrolled less than blacks. Similarly, the differential employment of males versus females is sustained both during summer and during the 1977-78 school year: females are employed less than males. In addition, the ethnic comparisons hold: whites are employed more than blacks, with a greater difference occurring during the school year than during the summer.

Furthermore, we can see the seriousness of the social problem at which the Entitlement demonstrations aim. As age increases, the proportion of youths not at work or attending school increases steadily from about 3 percent to about 12 percent. On the other hand, the solution to the problem is suggested by the fact that as highest grade attained increases, those who are neither employed nor in school drops steadily from about 11 percent to about 3 percent for blacks and from about 21 percent to about 2 percent for whites. These effects, again, are net of the variables described for the dynamic analysis of schooling and work behavior.

In short, while we still do not understand all the intricacies of the school/work association, these data suggest that increased schooling does help to ease employment problems, and the Entitlement focus upon schooling and work in combination is certainly an appropriate one.

APPENDIX C: COEFFICIENT ESTIMATES FOR THE MODELS OF APPENDIX A

In this Appendix we present complete coefficient estimates for the models of Appendix A. (See Appendix D for a formal presentation of the model.) These calculations were performed at the Yale Computer Center, on the IBM 370/158. Estimation is by maximum likelihood, using routines programmed by Randall J. Olsen. These are updates of the programming originally performed by R. Olsen for the initial work of Nerlove and Press with these models, and are described more completely in Nerlove and Press (1973). The calculations may be summarized as follows:

Table

B.1 Full sample, reduced form, age included as explanatory variable.

B.2 Sample restricted to highest grade attained $\leq$ 8th, reduced form, age excluded.

B.3 Sample restricted to highest grade attained = 9th, 10th, or 11th, reduced form, age excluded.

B.4 Sample restricted to highest grade attained = 9th, reduced form, age excluded.

B.5 Sample restricted to highest grade attained = 10th, reduced form, age excluded.

B.6 Sample restricted to highest grade attained = 11th, reduced form, age excluded.

B.7 Sample restricted to highest grade attained $\leq$ 8th, dynamic specification.

B.8 Sample restricted to highest grade attained = 9th, 10th, or 11th, dynamic specification.

B.9 Sample restricted to highest grade attained = 9th, dynamic specification.

B.10 Sample restricted to highest grade attained = 10th, dynamic specification.

B.11 Sample restricted to highest grade attained = 11th, dynamic specification.

TABLE C.1

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. REDUCED FORM SPECIFICATION, AGE INCLUDED.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	1.736	-0.590	-0.539
	(19.43)*	(5.58)	(5.92)
Male	0.000	0.000	0.000
	(-)	(-)	(-)
Female	0.029	-0.195	-0.312
	(0.88)	(5.14)	(9.89)
White	-0.664	0.410	0.039
	(14.97)	(8.02)	(0.84)
Black	0.000	0.000	0.000
	(-)	(-)	(-)
Hispanic	-0.401	0.122	0.077
	(6.46)	(1.72)	(1.23)
Denver	-0.132	-0.073	0.440
	(2.21)	(1.08)	(7.30)
Phoenix	-0.237	0.000	0.353
	(3.23)	(0.00)	(4.77)
Cincinnati	-0.084	-0.409	0.267
	(1.78)	(7.59)	(5.33)
Louisville	-0.253	-0.298	-0.064
	(4.31)	(4.01)	(0.97)
Baltimore	0.000	0.000	0.000
	(-)	(-)	(-)
Cleveland	0.100	-0.567	0.538
	(1.65)	(7.44)	(9.03)
Mississippi Pilot	0.356	-0.609	-0.311
	(6.19)	(7.56)	(4.78)
Mississippi Control	0.241	-0.614	0.242
	(3.62)	(7.64)	(3.55)
Neither Natural Parent	-0.424	0.105	-0.068
	(7.90)	(1.62)	(1.20)
Natural Mother Only	-0.228	0.000	0.038
	(6.19)	(0.00)	(0.99)
Natural Father Only	-0.258	0.017	-0.005
	(2.68)	(0.15)	(0.05)
Both Natural Parents	0.000	0.000	0.000
	(-)	(-)	(-)
Parents Education	0.041	0.010	0.003
	(7.03)	(1.39)	(0.48)
Age	-0.033	0.010	0.008
	(25.52)	(6.71)	(6.51)

Bivariate Interactions:

School Enrollment, School Year Employment	-0.070	(t= 3.82)
School Enrollment, Summer Employment	0.137	(t= 7.52)
School Year Employment, Summer Employment	0.264	(t=15.69)

Log Likelihood = -9396.

* t-statistic in parentheses

TABLE C.2

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. REDUCED FORM SPECIFICATION , AGE VARIABLE EXCLUDED. THE SAMPLE: HIGHEST GRADE ATTAINED 8th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	0.264	-0.202	-0.258
	(1.75)*	(0.98)	(1.31)
Male	0.000	0.000	0.000
	(-)	(-)	(-)
Female	-0.297	-0.243	-0.434
	(3.97)	(2.40)	(4.49)
White	-0.842	0.329	-0.111
	(8.71)	(2.75)	(0.94)
Black	0.000	0.000	0.000
	(-)	(-)	(-)
Hispanic	-0.636	0.182	-0.142
	(3.33)	(0.72)	(0.57)
Denver	0.482	-0.131	0.389
	(2.46)	(0.52)	(1.59)
Phoenix	0.035	-0.130	0.366
	(0.20)	(0.56)	(1.59)
Cincinnati	0.058	-0.528	0.326
	(0.51)	(3.31)	(2.25)
Louisville	0.242	-0.241	0.096
	(1.97)	(1.42)	(0.56)
Baltimore	0.000	0.000	0.000
	(-)	(-)	(-)
Cleveland	0.690	-0.424	0.553
	(4.13)	(2.29)	(3.31)
Mississippi Pilot	0.175	-0.489	-0.002
	(1.50)	(2.80)	(0.01)
Mississippi Control	0.239	-0.641	0.443
	(1.90)	(3.39)	(2.80)
Neither Natural Parent	-0.183	0.146	0.011
	(1.45)	(0.83)	(0.06)
Natural Mother Only	-0.262	-0.048	-0.072
	(2.96)	(0.40)	(0.63)
Natural Father Only	-0.274	-0.409	-0.033
	(1.34)	(1.29)	(0.12)
Both Natural Parents	0.000	0.000	0.000
	(-)	(-)	(-)
Parents Education	0.025	0.011	0.001
	(1.85)	(0.57)	(0.06)

Bivariate Interactions:

School Enrollment, School Year Employment: -0.096 (t=2.25)
School Enrollment, Summer Employment: -0.025 (t=0.58)
School Year Employment, Summer Employment: 0.343 (t=7.78)

Log Likelihood = -1634

* t-statistic in parentheses

TABLE C.3

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. REDUCED FORM SPECIFICATION, AGE VARIABLE EXCLUDED. THE SAMPLE: HIGHEST GRADE ATTAINED - 9th, 10th or 11th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	0.384	-0.131	-0.119
	(5.16)*	(1.44)	(1.54)
Male	0.000	0.000	0.000
	(-)	(-)	(-)
Female	0.087	-0.194	-0.312
	(2.56)	(4.88)	(9.20)
White	-0.455	0.425	0.068
	(9.49)	(7.34)	(1.31)
Black	0.000	0.000	0.000
	(-)	(-)	(-)
Hispanic	-0.267	0.106	0.101
	(4.28)	(1.42)	(1.56)
Denver	-0.241	-0.120	0.373
	(3.96)	(1.75)	(5.96)
Phoenix	-0.240	-0.026	0.310
	(3.13)	(0.30)	(3.91)
Cincinnati	-0.160	-0.415	0.225
	(3.14)	(6.95)	(4.21)
Louisville	-0.374	-0.342	-0.114
	(5.88)	(4.37)	(1.59)
Baltimore	0.000	0.000	0.000
	(-)	(-)	(-)
Cleveland	-0.038	-0.613	0.513
	(0.59)	(7.37)	(8.08)
Mississippi Pilot	0.345	-0.640	-0.380
	(5.34)	(7.30)	(5.43)
Mississippi Control	0.314	-0.627	0.192
	(3.56)	(6.76)	(2.53)
Neither Natural Parent	-0.549	0.120	-0.051
	(9.80)	(1.68)	(0.85)
Natural Mother Only	-0.169	0.006	0.057
	(4.31)	(0.11)	(1.40)
Natural Father Only	-0.238	0.117	0.025
	(2.31)	(0.93)	(0.23)
Both Natural Parents	0.000	0.000	0.000
	(-)	(-)	(-)
Parents Education	0.044	0.008	0.000
	(7.11)	(1.01)	(0.04)

Bivariate Interactions:

School Enrollment, School Year Employment:	-0.135	(t= 6.80)
School Enrollment, Summer Employment:	0.104	(t= 5.52)
School Year Employment, Summer Employment:	0.258	(t=14.04)

Log Likelihood = -8031

* t-statistic in parentheses

TABLE C.4

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. REDUCED FORM SPECIFICATION, AGE VARIABLE EXCLUDED. THE SAMPLE: HIGHEST GRADE ATTAINED - 9th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	0.050	-0.252	-0.249
	(0.38)*	(1.82)	(1.92)
Male	0.000	0.000	0.000
	(-)	(-)	(-)
Female	0.116	-0.219	-0.286
	(1.96)	(3.57)	(5.14)
White	-0.559	0.448	0.058
	(7.22)	(5.42)	(0.73)
Black	0.000	0.000	0.000
	(-)	(-)	(-)
Hispanic	-0.099	0.231	0.062
	(0.87)	(1.99)	(0.55)
Denver	-0.272	-0.139	0.436
	(2.46)	(1.26)	(4.07)
Phoenix	-0.134	-0.078	0.446
	(0.97)	(0.56)	(3.27)
Cincinnati	-0.023	-0.536	0.258
	(0.26)	(5.61)	(3.03)
Louisville	-0.184	-0.328	0.012
	(1.78)	(3.00)	(0.11)
Baltimore	0.000	0.000	0.000
	(-)	(-)	(-)
Cleveland	0.313	-0.818	0.652
	(2.41)	(5.94)	(6.19)
Mississippi Pilot	0.397	-0.630	-0.423
	(3.09)	(4.53)	(3.25)
Mississippi Control	0.207	-0.545	0.158
	(1.46)	(3.50)	(1.22)
Neither Natural Parent	-0.413	0.217	-0.156
	(4.13)	(2.02)	(1.54)
Natural Mother Only	-0.105	0.127	-0.081
	(1.45)	(1.70)	(1.20)
Natural Father Only	-0.318	-0.003	0.163
	(1.69)	(0.01)	(0.86)
Both Natural Parents	0.000	0.000	0.000
	(-)	(-)	(-)
Parents Education	0.057	0.003	0.009
	(5.00)	(0.27)	(0.77)

Bivariate Interactions:

School Enrollment, School Year Employment:	-0.123	(t=3.75)
School Enrollment, Summer Employment:	0.022	(t=0.70)
School Year Employment, Summer Employment:	0.251	(t=7.98)

Log Likelihood = -2745

* t-statistic in parentheses

TABLE C.5

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. REDUCED FORM SPECIFICATION, AGE VARIABLE EXCLUDED. THE SAMPLE: HIGHEST GRADE ATTAINED - 10th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	0.617	0.026	-0.243
	(4.68)*	(0.21)	(2.00)
Male	0.000	0.000	0.000
	(-)	(-)	(-)
Female	-0.019	-0.242	-0.329
	(0.32)	(4.24)	(6.26)
White	-0.469	0.482	0.161
	(5.48)	(5.61)	(1.90)
Black	0.000	0.000	0.000
	(-)	(-)	(-)
Hispanic	-0.479	0.025	0.194
	(4.50)	(0.24)	(1.85)
Denver	-0.135	-0.170	0.282
	(1.22)	(1.65)	(2.76)
Phoenix	-0.244	-0.111	0.198
	(1.88)	(0.88)	(1.60)
Cincinnati	-0.172	-0.505	0.206
	(1.85)	(5.70)	(2.45)
Louisville	-0.384	-0.518	-0.196
	(3.41)	(4.41)	(1.70)
Baltimore	0.000	0.000	0.000
	(-)	(-)	(-)
Cleveland	-0.191	-0.706	0.511
	(1.61)	(5.81)	(4.80)
Mississippi Pilot	0.324	-0.754	-0.219
	(2.58)	(6.41)	(2.08)
Mississippi Control	0.599	-0.875	0.362
	(3.36)	(6.06)	(3.17)
Neither Natural Parent	-0.638	0.196	0.068
	(6.56)	(1.99)	(0.72)
Natural Mother Only	-0.202	-0.038	0.199
	(2.83)	(0.56)	(3.18)
Natural Father Only	-0.386	0.291	-0.002
	(2.38)	(1.76)	(0.02)
Both Natural Parents	0.000	0.000	0.000
	(-)	(-)	(-)
Parents Education	0.029	0.006	-0.001
	(2.76)	(0.53)	(0.13)

Bivariate Interactions:

School Enrollment, School Year Employment:	-0.100	(t=3.12)
School Enrollment, Summber Employment:	0.125	(t=3.99)
School Year Employment, Summer Employment:	0.249	(t=8.47)

Log Likelihood = -2981

* t-statistic in parentheses

TABLE C.6

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. REDUCED FORM SPECIFICATION, AGE VARIABLE EXCLUDED. THE SAMPLE: HIGHEST GRADE ATTAINED - 11th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	0.533	-0.112	0.285
	(3.17)*	(0.75)	(1.99)
Male	0.000	0.000	0.000
	(-)	(-)	(-)
Female	0.212	-0.152	-0.381
	(2.86)	(2.34)	(6.09)
White	-0.188	0.497	0.010
	(1.62)	(4.75)	(0.09)
Black	0.000	0.000	0.000
	(-)	(-)	(-)
Hispanic	-0.104	0.154	0.105
	(0.80)	(1.29)	(0.84)
Denver	-0.495	-0.133	0.326
	(3.63)	(1.17)	(2.87)
Phoenix	-0.460	0.033	0.237
	(2.73)	(0.22)	(1.56)
Cincinnati	-0.400	-0.210	0.173
	(3.19)	(2.08)	(1.78)
Louisville	-0.737	-0.204	-0.198
	(4.98)	(1.50)	(1.51)
Baltimore	0.000	0.000	0.000
	(-)	(-)	(-)
Cleveland	-0.280	-0.342	0.312
	(1.84)	(2.73)	(2.63)
Mississippi Pilot	0.184	-0.586	-0.675
	(1.15)	(4.46)	(5.75)
Mississippi Control	0.368	-0.462	-0.085
	(0.18)	(2.92)	(0.63)
Neither Natural Parent	-0.635	-0.083	-0.075
	(5.58)	(0.74)	(0.71)
Natural Mother Only	-0.190	-0.050	0.073
	(2.08)	(0.66)	(0.99)
Natural Father Only	0.236	-0.015	-0.034
	(0.88)	(0.07)	(0.16)
Both Natural Parents	0.000	0.000	0.000
	(-)	(-)	(-)
Parents Education	0.051	0.012	-0.013
	(3.66)	(0.95)	(1.03)

Bivariate Interactions:

School Enrollment, School Year Employment:	-0.222	(t=5.69)
School Enrollment, Summer Employment:	0.155	(t=3.91)
School Year Employment, Summer Employment:	0.266	(t=7.75)

Log Likelihood = -2180

* t-statistic in parentheses

TABLE C.7

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. DYNAMIC SPECIFICATION. THE SAMPLE: HIGHEST GRADE ATTAINED 8th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	0.492	-0.574	-0.290
	(1.76)*	(1.78)	(0.87)
Male	0.000	0.000	0.000
	(-)	(-)	(-)
Female	-0.323	-0.227	-0.410
	(3.41)	(1.86)	(3.75)
White	-0.724	0.305	-0.171
	(6.19)	(2.10)	(1.23)
Black	0.000	0.000	0.000
	(-)	(-)	(-)
Hispanic	-0.320	0.145	-0.180
	(1.36)	(0.51)	(0.66)
Denver	-0.050	-0.101	0.239
	(0.20)	(0.35)	(0.87)
Phoenix	0.025	-0.116	0.312
	(0.12)	(0.46)	(1.24)
Cincinnati	0.025	-0.540	0.238
	(0.17)	(2.81)	(1.43)
Louisville	0.099	-0.228	0.005
	(0.61)	(1.24)	(0.02)
Baltimore	0.000	0.000	0.000
	(-)	(-)	(-)
Cleveland	0.582	-0.370	0.513
	(2.65)	(1.69)	(2.76)
Mississippi Pilot	0.441	-0.597	-0.222
	(2.78)	(2.82)	(1.16)
Mississippi Control	0.383	-0.789	0.162
	(2.15)	(3.49)	(0.87)
Neither Natural Parent	-0.029	0.145	0.078
	(0.17)	(0.77)	(0.43)
Natural Mother Only	-0.407	-0.003	-0.004
	(3.46)	(0.02)	(0.03)
Natural Father Only	-0.313	-0.360	0.074
	(1.19)	(1.02)	(0.25)
Both Natural Parents	0.000	0.000	0.000
	(-)	(-)	(-)
Parents Education	0.022	0.009	-0.009
	(1.24)	(0.42)	(0.44)
Not Enrolled in School, 1976-77	0.000	0.000	0.000
	(-)	(-)	(-)
Enrolled in School, 1976-77	1.537	-0.113	0.205
	(12.47)	(0.76)	(0.13)
Not Employed, Spring, 1977	0.000	0.000	0.000
	(-)	(-)	(-)
Employed, Spring, 1977	-0.484	0.626	1.76
	(2.87)	(4.67)	(10.29)
Age	-0.036	0.010	-0.004
	(7.58)	(2.02)	(0.71)

Bivariate Interactions:

School Enrollment, School Year Employment:	0.054	(t=0.94)
School Enrollment, Summer Employment:	0.077	(t=1.32)
School Year Employment, Summer Employment:	0.232	(t-4.54)

Log Likelihood = -1282

* t-statistic in parentheses

TABLE C.8

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. DYNAMIC SPECIFICATION. THE SAMPLE: HIGHEST GRADE ATTAINED = 9th, 10th or 11th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	0.246 (1.65)*	-0.608 (5.05)	-0.994 (7.98)
Male	0.000 (-)	0.000 (-)	0.000 (-)
Female	0.070 (1.58)	-0.170 (4.84)	-0.257 (7.43)
White	-0.412 (6.35)	0.405 (7.82)	-0.033 (0.58)
Black	0.000 (-)	0.000 (-)	0.000 (-)
Hispanic	-0.288 (3.47)	0.130 (1.96)	0.154 (2.21)
Denver	-0.281 (3.36)	0.138 (2.18)	0.263 (4.00)
Phoenix	-0.279 (2.74)	-0.030 (0.38)	0.212 (2.49)
Cincinnati	-0.154 (2.15)	-0.442 (8.09)	0.127 (2.38)
Louisville	-0.381 (4.53)	-0.355 (5.16)	-0.181 (2.50)
Baltimore	0.000 (-)	0.000 (-)	0.000 (-)
Cleveland	-0.131 (1.48)	-0.605 (8.31)	0.466 (7.17)
Mississippi Pilot	0.248 (2.71)	-0.673 (9.11)	-0.484 (6.83)
Mississippi Control	0.255 (2.24)	-0.679 (7.64)	0.024 (0.31)
Neither Natural Parent	-0.351 (4.62)	0.104 (1.68)	-0.044 (0.69)
Natural Mother Only	-0.183 (3.36)	0.032 (0.75)	0.114 (2.743)
Natural Father Only	-0.206 (1.54)	0.151 (1.36)	0.101 (0.90)
Both Natural Parents	0.000 (-)	0.000 (-)	0.000 (-)
Parents Education	0.037 (4.47)	0.011 (1.64)	0.006 (0.87)
Not Enrolled in School, 1976-77	0.000 (-)	0.000 (-)	0.000 (-)
Enrolled in School, 1976-77	1.599 (24.31)	0.020 (0.33)	0.457 (6.85)
Not Employed, Spring, 1977	0.000 (-)	0.000 (-)	0.000 (-)
Employed, Spring, 1977	-0.173 (2.58)	0.421 (8.22)	1.539 (19.97)
Age	-0.025 (13.32)	0.008 (5.31)	0.006 (4.02)

Bivariate Interactions:

School Enrollment, School Year Employment:	-0.073	(t=2.97)
School Enrollment, Summer Employment:	0.113	(t=4.37)
School Year Employment, Summer Employment:	0.189	(t=9.68)

Log Likelihood = -6809

* t-statistic in parentheses

TABLE C.9

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. DYNAMIC SPECIFICATION. THE SAMPLE: HIGHEST GRADE ATTAINED = 9th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	0.739 (2.46)*	-0.714 (2.80)	-0.659 (2.89)
Male	0.000 (-)	0.000 (-)	0.000 (-)
Female	0.001 (0.01)	-0.185 (2.63)	-0.225 (3.78)
White	-0.512 (4.34)	0.442 (4.81)	0.018 (0.21)
Black	0.000 (-)	0.000 (-)	0.000 (-)
Hispanic	0.069 (0.40)	0.253 (1.96)	0.157 (1.31)
Denver	-0.501 (2.93)	-0.130 (1.03)	0.305 (2.62)
Phoenix	-0.513 (2.47)	-0.048 (0.31)	0.346 (2.34)
Cincinnati	-0.059 (0.41)	-0.550 (4.96)	0.156 (1.71)
Louisville	-0.232 (1.43)	-0.325 (2.55)	-0.042 (0.38)
Baltimore	0.000 (-)	0.000 (-)	0.000 (-)
Cleveland	0.123 (0.72)	-0.803 (5.41)	0.597 (5.48)
Mississippi Pilot	0.193 (0.93)	-0.638 (4.03)	-0.502 (3.96)
Mississippi Control	0.182 (0.80)	-0.573 (3.22)	-0.044 (0.31)
Neither Natural Parent	-0.129 (0.86)	0.208 (1.70)	-0.164 (1.48)
Natural Mother Only	-0.074 (0.65)	0.143 (1.70)	-0.043 (0.60)
Natural Father Only	-0.380 (1.32)	-0.034 (0.144)	0.086 (0.42)
Both Natural Parents	0.000 (-)	0.000 (-)	0.000 (-)
Parents Education	0.042 (2.41)	0.005 (0.35)	0.009 (0.72)
Not Enrolled in School, 1976-77	0.000 (-)	0.000 (-)	0.000 (-)
Enrolled in School, 1976-77	1.408 (12.98)	0.119 (1.09)	0.357 (3.41)
Not Employed, Spring, 1977	0.000 (-)	0.000 (-)	0.000 (-)
Employed, Spring, 1977	-0.206 (1.57)	0.398 (4.25)	1.714 (12.00)
Age	-0.045 (10.43)	0.007 (2.05)	-0.002 (0.46)

Bivariate Interactions:

School Enrollment, School Year Employment:	-0.080	(t=1.94)
School Enrollment, Summer Employment:	0.006	(t=0.13)
School Year Employment, Summer Employment:	0.191	(t=5.52)

Log Likelihood = -2241

* t-statistic in parentheses

TABLE C.10

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. DYNAMIC SPECIFICATION. THE SAMPLE: HIGHEST GRADE ATTAINED = 10th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	1.341	-0.283	-1.003
	(4.30)*	(1.11)	(4.68)
Male	0.000	0.000	0.000
	(-)	(-)	(-)
Female	-0.065	-0.220	-0.275
	(0.71)	(3.15)	(5.07)
White	-0.446	0.431	-0.008
	(3.45)	(4.32)	(0.08)
Black	0.000	0.000	0.000
	(-)	(-)	(-)
Hispanic	-0.634	0.032	0.196
	(3.97)	(0.25)	(1.79)
Denver	-0.236	-0.184	0.187
	(1.36)	(1.49)	(1.74)
Phoenix	-0.309	-0.119	0.086
	(1.60)	(0.81)	(0.64)
Cincinnati	-0.263	-0.527	0.114
	(1.79)	(4.70)	(1.34)
Louisville	-0.467	-0.504	-0.201
	(2.70)	(3.41)	(1.79)
Baltimore	0.000	0.000	0.000
	(-)	(-)	(-)
Cleveland	-0.232	-0.704	0.466
	(1.36)	(4.71)	(4.35)
Mississippi Pilot	0.110	-0.753	-0.279
	(0.55)	(5.01)	(2.73)
Mississippi Control	0.251	-0.896	0.221
	(1.00)	(4.94)	(1.90)
Neither Natural Parent	-0.507	0.168	0.009
	(3.56)	(1.44)	(0.10)
Natural Mother Only	-0.251	-0.021	0.237
	(2.27)	(0.25)	(3.75)
Natural Father Only	-0.271	0.304	0.073
	(1.15)	(1.65)	(0.43)
Both Natural Parents	0.000	0.000	0.000
	(-)	(-)	(-)
Parents Education	0.007	0.011	0.009
	(0.41)	(0.84)	(0.93)
Not Enrolled in School, 1976-77	0.000	0.000	0.000
	(-)	(-)	(-)
Enrolled in School, 1976-77	1.503	-0.064	0.394
	(13.16)	(0.63)	(3.89)
Not Employed, Spring, 1977	0.000	0.000	0.000
	(-)	(-)	(-)
Employed, Spring, 1977	-0.136	0.389	1.417
	(1.08)	(4.34)	(12.84)
Age	-0.039	0.006	0.004
	(9.06	(1.64)	(1.59)

Bivariate Interactions:

School Enrollment, School Year Employment:	-0.032	(t=0.82)
School Enrollment, Summer Employment:	0.142	(t=3.35)
School Year Employment, Summer Employment:	0.196	(t=6.16)

Log Likelihood = -2544

* t-statistic in parentheses

TABLE C.11

NET EFFECTS AND BIVARIATE INTERACTIONS IN MULTIVARIATE LOGIT ESTIMATION OF DETERMINANTS OF SUMMER EMPLOYMENT, SCHOOL YEAR EMPLOYMENT, AND SCHOOL ENROLLMENT. DYNAMIC SPECIFICATION. THE SAMPLE: HIGHEST GRADE ATTAINED = 11th.

Explanatory Variable	School Enrollment Equation	School Year Employment Equation	Summer Employment Equation
Constant	0.793 (2.45)*	-0.675 (2.39)	-0.535 (2.00)
Male	0.000 (-)	0.000 (-)	0.000 (-)
Female	0.168 (2.02)	-0.115 (1.64)	-0.326 (5.02)
White	-0.119 (0.88)	0.436 (3.95)	-0.189 (1.64)
Black	0.000 (-)	0.000 (-)	0.000 (-)
Hispanic	-0.064 (0.42)	0.164 (1.27)	0.119 (0.92)
Denver	-0.627 (4.05)	-0.157 (1.28)	0.201 (1.70)
Phoenix	-0.504 (2.63)	0.013 (0.09)	0.179 (1.13)
Cincinnati	-0.413 (2.99)	-0.261 (2.38)	0.059 (0.59)
Louisville	-0.720 (4.35)	-0.272 (1.87)	-0.374 (2.69)
Baltimore	0.000 (-)	0.000 (-)	0.000 (-)
Cleveland	-0.449 (2.70)	-0.331 (2.45)	0.260 (2.17)
Mississippi Pilot	0.095 (0.55)	-0.641 (4.51)	-0.810 (6.72)
Mississippi Control	0.134 (0.62)	-0.568 (3.20)	-0.260 (1.82)
Neither Natural Parent	-0.359 (2.70)	-0.102 (0.83)	0.058 (0.51)
Natural Mother Only	-0.135 (1.34)	-0.032 (0.38)	0.161 (2.10)
Natural Father Only	0.142 (0.51)	0.100 (0.43)	0.206 (0.93)
Both Natural Parents	0.000 (-)	0.000 (-)	0.000 (-)
Parents Education	0.051 (3.23)	0.018 (1.28)	-0.003 (0.23)
Not Enrolled in School, 1976-77	0.000 (-)	0.000 (-)	0.000 (-)
Enrolled in School, 1976-77	1.586 (11.55)	-0.107 (0.89)	0.544 (3.91)
Not Employed, Spring, 1977	0.000 (-)	0.000 (-)	0.000 (-)
Employed, Spring, 1977	-0.197 (1.74)	0.467 (5.21)	1.60 (10.73)
Age	-0.032 (7.06)	0.010 (2.74)	0.001 (0.21)

Bivariate Interactions:

School Enrollment, School Year Employment:	-0.141	(t=3.11)
School Enrollment, Summer Employment:	0.142	(t=2.79)
School Year Employment, Summer Employment:	0.195	(t=5.32)

Log Likelihood = -1882

* t-statistic in parentheses

APPENDIX D: The MODEL, FORMAL ASPECTS

The models underlying the results we report in Appendices A and B are those proposed by Nerlove and Press (1973, 1976) for the analysis of jointly dependent qualitative variables when at least some of the explanatory variables are continuous. These can be viewed as an extention of the log-linear model for contingency tables (Bishop, Fienberg, and Holland, 1975; Goodman, 1972) in which the "main effects" in the log-linear model for the cross-tabulation of the endogenous variables are taken to be a function of exogenous variables, some of which may be continuous. Estimation is by maximum likelihood, and provides parameter estimates for the effect of each explanatory variable upon each dependent variable (binary dependent variable in our case), as well as estimates of the bivariate interaction terms for the dependent variables. When all variables are discrete the resulting models are a special case of the general log-linear model, and when only one dependent variable is permitted the resulting model is identical to the univariate logistic.

More formally, if A, B, and C are jointly dependent binary variables with states denoted by $i_1 = 0,1$, $i_2 = 0,1$, and $i_3 = 0,1$, and k denotes a particular cell of the AxBxC cross-tabulation (k = 0,0,0; 1,0,0; 1,1,0; etc.), then the model defines p_k, the individual's propensity to assume state k, to be

$$p_k = \frac{e^{\theta_k}}{\sum_{\text{All } k} e^{\theta_k}}$$

where $\theta = \alpha^A_{i_1} + \alpha^B_{i_2} + \alpha^C_{i_3} + \alpha^{AB}_{i_1 i_2} + \alpha^{AC}_{i_1 i_3} + \alpha^{BC}_{i_2 i_3}$ and the α's are log-linear model parameters (with the usual restrictions). Then, α^A, α^B, and α^C are written as linear functions of the explanatory variables (for example, for the i^{th} individual, $\alpha^A_{i_1 i} = x'_{ij}\alpha^{A*}_{i_1 j}$, where x_{ij} is the vector of the i^{th} individual's values for the explanatory

variables, and α^{A*} is the vector of coefficients to be estimated) and coefficients are reported for the determinants of A, B, and C. (That is, α^{A*}, α^{B*} and α^{C*} are estimated. With additive restrictions, each is unique.) In addition, the values of α^{AB}, α^{AC} and α^{BC}, which are assumed to be independent of the explanatory variables, are reported. These binary interactions tie the equations for the dependent variable main effects together, so that their values must be combined with α^{A*}, α^{B*} and α^{C*} to produce the fitted $\hat{p}_k$'s reported in Chapter 8.

This model has a number of desirable properties. It appropriately models simultaneously determined dummy endogenous variables, is parsimonious, and is computationally tractable. Not only is the overall model logistic, but probability distributions for one of the dependent variables, conditional on the others, are also logistic. If the bivariate interactions are zero the model produces identical results to those forthcoming from a collection of univariate logits, one for each dependent variable. Thus, in many ways the Nerlove and Press specification is the model of choice for our situation. Its only competitor appears to be a multivariate probit model, which is computationally more cumbersome, but does possess some advantages over the multivariate logistic. For an explicit comparison of this model with the Nerlove and Press specification, and an argument for the use of multivariate probit, see Heckman, 1978 (pp. 950-954).

APPENDIX E: SUPPLEMENTARY TABLES FOR CHAPTERS 1-5

This Appendix presents tables which supplement those provided earlier. They are arranged as follows:

Chapter	Table
One	E1.1
Two	E2.1 - E2.3
Three	E3.1 - E3.3
Five	E5.1 - E5.6

TABLE E 1.1

UNEMPLOYMENT RATES, CIVILIAN LABOR FORCE PARTICIPATION RATES, AND EMPLOYMENT/ POPULATION RATIOS BY AGE, SEX, AND RACE FOR SELECTED YEARS, 1948 to 1976

Year	Total			Males					
				White			Black		
	Unemployment Rates	Civilian Labor Force Participation Rates	Employment/ Population Ratios	Unemployment Rates	Civilian Labor Force Participation Rates	Employment/ Population Ratios	Unemployment Rates	Civilian Labor Force Participation Rates	Employment/ Population Ratios
16-17 Year Olds									
48	10.1	41.7	37.5	10.2	51.2	46.0	9.4	59.8	54.2
56	12.3	41.9	36.7	11.2	51.3	45.6	15.7	49.6	41.8
65	16.5	35.8	29.9	14.7	44.6	38.0	27.1	39.3	28.6
68	14.7	39.1	33.4	12.3	47.7	41.8	26.6	37.9	27.8
70	17.1	41.0	34.0	15.7	48.9	41.2	27.8	34.8	25.1
73	17.3	44.6	36.9	15.1	52.7	44.7	34.4	33.4	21.9
74	18.3	45.5	37.2	16.2	53.3	43.8	39.0	34.6	21.1
75	21.4	44.4	34.9	19.7	51.8	41.6	39.4	30.1	18.2
76	21.1	44.6	35.2	19.7	51.8	41.6	37.2	30.2	19.0
18-19 Year Olds									
48	8.6	63.4	57.9	9.4	76.2	69.0	10.5	77.8	69.6
56	10.2	61.2	49.4	9.7	71.9	64.9	14.9	76.4	65.0
65	13.5	57.1	49.4	11.4	65.8	58.3	20.2	66.7	53.2
68	11.2	58.5	51.9	8.2	65.7	60.3	19.0	63.3	51.3
70	13.8	59.9	51.6	12.0	67.4	59.3	28.1	61.8	47.5
73	12.4	63.6	55.7	10.0	72.3	65.1	22.1	61.4	47.8
74	14.2	64.9	55.7	11.5	73.6	65.1	26.6	62.4	45.8
75	18.9	64.2	52.1	17.2	72.8	60.3	32.9	57.5	38.6
76	17.4	64.8	53.5	15.5	73.5	62.1	34.0	55.6	36.7
20-24 Year Olds									
48	6.2	64.1	60.1	6.4	84.4	79.0	11.7	85.6	75.6
56	6.6	64.1	59.9	6.1	87.6	82.3	12.0	88.9	78.2
65	6.7	66.4	62.0	5.9	85.3	80.3	9.3	89.8	81.4
68	5.8	67.0	63.1	4.6	82.4	78.6	8.3	85.0	77.9
70	8.2	69.2	63.5	9.4	83.3	75.5	12.6	83.5	73.0
73	7.8	72.6	66.9	6.5	85.8	80.2	12.6	81.8	71.5
74	9.0	74.0	67.3	7.8	86.5	79.8	15.4	82.1	69.5
75	13.6	73.9	63.8	13.2	85.5	74.2	22.9	78.4	60.4
76	12.0	74.7	65.7	10.9	86.2	76.8	20.7	78.4	62.2

Source: Inter-Agency Task Force on Teenage Unemployment, Office of the President, "Draft Report on the Task Force on Teenage Unemployment," Washington, D.C., October 26, 1977.

TABLE E 1.1 (Continued)

UNEMPLOYMENT RATES, CIVILIAN LABOR FORCE PARTICIPATION RATES, AND EMPLOYMENT/ POPULATION RATIOS BY AGE, SEX, AND RACE FOR SELECTED YEARS, 1948 to 1976

Year	Females					
	White			Black		
	Unemployment Rates	Civilian Labor Force Participation Rates	Employment/ Population Ratios	Unemployment Rates	Civilian Labor Force Participation Rates	Employment/ Population Ratios
16-17 Year Olds						
48	9.7	31.7	28.6	11.8	29.1	25.7
56	12.1	33.5	29.4	22.0	28.3	22.1
65	15.0	28.7	24.4	37.8	20.5	12.8
68	13.9	33.0	28.4	33.7	23.3	15.4
70	15.3	36.6	31.0	36.9	24.3	15.3
73	15.7	41.7	35.2	36.5	24.3	15.4
74	16.4	43.3	36.2	36.2	24.2	15.4
75	19.2	42.7	34.5	38.9	26.5	16.2
76	18.2	43.8	35.8	46.0	23.9	12.9
18-19 Year Olds						
48	6.8	53.5	49.9	14.6	41.2	35.2
56	8.3	53.0	48.6	23.4	44.6	34.2
65	13.4	50.6	43.8	27.8	40.0	28.9
68	11.0	53.3	47.4	26.2	46.9	34.6
70	11.9	55.0	48.5	32.9	44.7	30.0
73	10.9	58.9	52.5	33.3	45.1	30.1
74	13.0	60.4	52.5	33.7	44.6	29.6
75	16.1	60.4	50.7	38.3	45.1	27.8
76	15.1	61.8	52.5	35.0	43.3	28.1
20-24 Year Olds						
48	4.2	45.1	43.2	10.2	47.1	42.3
56	5.1	46.5	44.1	14.8	44.9	38.3
65	6.3	49.2	46.1	13.7	55.2	47.6
68	5.9	54.0	50.8	12.3	58.4	51.2
70	6.9	57.7	53.7	15.0	57.7	49.0
73	7.0	61.6	57.3	17.6	57.5	47.4
74	8.2	63.8	58.6	18.0	58.2	47.7
75	11.2	65.4	58.1	22.5	56.2	43.6
76	10.4	66.2	59.3	22.7	57.9	44.8

Source: Inter-Agency Task Force on Teenage Unemployment, Office of the President, "Draft Report on the Task Force on Teenage Unemployment," Washington, D.C., October 26, 1977.

TABLE E2.1

DEFINITION OF PARTICIPANT ELIGIBILITY

(a) Every youth who resides in the geographic area of the Entitlement Project shall be entitled to participate in the program, provided that, at the time of application and selection, the youth provides documented evidence which shows that:

(1) The youth is aged 16-19 inclusive, unless the Department has authorized the prime sponsor to administer an Entitlement Project for youths between 19 and 25 years of age;

(2) The youth has not received a high school diploma or certificate of high school equivalency;

(3) The youth has resided in the Entitlement Project area for 30 days. Newly discharged veterans, however, are exempt from the 30 day residency requirement;

(4) The youth is economically disadvantaged. For purposes of this subpart, economically disadvantaged shall mean that the youth:

(i) Either constitutes a family of one, or is a member of a family,

(ii) And receives cash welfare payments under a Federal, State or local program, or whose income is at or below the poverty level as determined by the Office of Management and Budget (OMB).

For the purposes of this paragraph, a "family" is as defined in §675.4 of this title, and the term "family income" is as defined in §675.4 of this title. Family income shall be computed pursuant to §675.4 of this title except that earnings received by a youth under Title IV shall be disregarded in computing family income. In the case of newly discharged veterans, income received while in military service shall be disregarded in computing family income; and

(5) The youth is:

(i) Enrolled in and attending a State-certified secondary school program leading to a high school diploma, or enrolled in such a program scheduled to begin within 30 days of the Youth's Entitlement program enrollment; or

TABLE E2.1 (continued)

(ii) Enrolled in and attending a certified or approved program leading to a certificate of high school equivalency (GED), or enrolled in such a program scheduled to begin within 30 days of the Youth's Entitlement program enrollment.

(b) If the youth is under the juvenile or criminal justice system, the appropriate authorities must approve the youth's participation or continued participation in writing. (A person must be a citizen, a resident alien or legal refugee.)

(c) The citizenship provisions of §675.5(b) of this title shall apply to the Entitlement program.

(d) (1) No otherwise eligible youth shall be excluded from participation because of any mental or physical handicap unless a qualified physician or psychologist certifies that the youth is mentally or physically incapable of obtaining a high school diploma or certificate of high school equivalency.

(2) All otherwise eligible mentally or physically handicapped youths who are not certified as provided in paragraph (d)(1) of this section, are entitled to participate in the program. The prime sponsor must take every step necessary to insure that such youths can participate. The prime sponsor may not segregate such youths from regular program activities, but must redesign these activities to ensure participation.

Source: Federal Register, Vol. 44, No. 48, Part II, Friday March 9, 1979. "Comprehensive Employment and Training Act. Regulations Under Part A of Title IV of the Act." U.S. Department of Labor, Employment and Training Administration, §680.316, pp. 13201-13202.

TABLE E2.2

DEFINITION OF INCOME: YOUTH INCENTIVE ENTITLEMENT PILOT PROJECTS

A) Items included in income for program eligibility determination:

1) Gross Wages or Salary - The total money earnings received for work performed as an employee. It represents the amount paid before deductions for income taxes, social security, land purchases, union dues, etc. Wages and salaries received by individuals through public service employment and on-the-job training under CETA should be included.

2) Alimony and Child Support Payments

3) Pensions, Social Security Benefits, and Retirement Income - Payments from pension plans, social security benefits (including OASI and Federal disability insurance payments), governmental retirement payments, and Armed Forces retirement payments (other than compensation for disability or death).

4) Self-Employment and Farm Income - Net money income (gross receipts minus operating expenses) from a business firm, farm, or other enterprise in which a person is engaged on his/her own account.

5) Rents, Dividends, Interest Payments - Money received from such sources as net rents and dividend and interest payments.

6) Other - Money received from other sources, including regular income from relatives not living with the applicant.

B) Items excluded from income for program eligibility determination:

1) Non-cash income, such as food stamps and income received in the form of food, housing or medical care.

2) Imputed value of owner-occupied property (i.e. rental value).

3) Cash welfare payments.

4) Payments made to participants in employment and training programs such as payments for training, work experience, transportation, and dependency allowances. (Wages and salaries received by family members through public service employment and on-the-job training are not excluded from income.)

5) Capital gains and losses.

6) One-time unearned income, such as the following examples:

a) Payments received for a limited fixed term under income maintenance programs, such as unemployment insurance programs and supplemental unemployment benefit plans.

b) One-time (or fixed-term) scholarship and fellowship grants.

c) Accident, health, and casualty insurance proceeds.

d) Disability and death payments, including fixed term (but not lifetime) life insurance annuities and death benefits.

e) One-time awards and gifts.

f) Inheritance, including fixed term annuities.

g) Fixed term workers' compensation awards.

h) Terminal leave pay.

i) Soil bank payments.

j) Agriculture crop stabilization payments.

7) For veterans, the following items are also excluded:

a) Amounts received as pay or allowances by any person while serving on active duty in the armed forces.

b) Educational assistance and compensation payments to veterans and other eligible persons under Chapters 11, 13, 31, 34, 35, and 36 of Title 38, United States Code.

Source: "Definition of Economically Disadvantaged and Lower Living Standard Income Level for CETA Purposes," Employment and Training Administration (ETA) Field Memo 9-78: ETR-RF-200.

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TABLE E2.3

U.S. POVERTY GUIDELINES 1978[1]

Family Size	NonFarm Residence	Farm Residence
1	$3,140	$2,690
2	4,160	3,550
3	5,180	4,410
4	6,200	5,270
5	7,220	6,130
6	8,240	6,990
7	9,260	7,850
8	10,280	8,710
9	11,300	9,570
10	12,320	10,430

[1] Source: U.S. Office of Management and Budget poverty level figures which are the income criteria for eligibility in the Entitlement Program.

TABLE E3.1

DEPENDENCE OF FAMILY INCOME ON WELFARE PAYMENTS*

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
Percentage of Parent and Other Income** Contributed by Welfare Payments	29.4	16.6	38.3	36.3	40.7	45.2	20.8	23.3	33.3
Percentage of Eligible Youth Income Contributed by Welfare Payments	28.6	7.9	41.0	31.2	44.0	54.5	17.5	1.9	31.4
Percentage of All Families Receiving AFDC Only	9.8	4.0	9.5	8.6	5.3	3.0	4.6	4.6	6.7
Percentage of All Families Receiving Some Type of Welfare	71.5	51.4	73.1	77.3	73.8	74.5	62.6	63.6	70.2

* AFDC, SSI, Food Stamps, and Other Public Assistance.

** Income from eligible youth excluded.

TABLE E 3.2

PERCENT OF YOUTHS WITH CHILDREN, BY AGE, RACE, AND SEX, BY SITE*

Age	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
16	4.2 (353)	7.1 (140)	7.0 (416)	9.2 (228)	8.6 (478)	6.2 (193)	7.5 (267)	9.0 (178)	7.3 (2253)
17	11.3 (293)	11.0 (145)	15.4 (364)	21.4 (187)	18.2 (428)	10.7 (177)	11.4 (229)	11.7 (137)	14.5 (1960)
18	22.4 (237)	25.3 (87)	31.7 (252)	27.6 (123)	23.0 (317)	17.0 (100)	13.8 (181)	25.0 (76)	23.5 (1373)
19	34.4 (125)	25.5 (51)	39.8 (161)	44.1 (93)	31.9 (204)	33.3 (69)	33.7 (83)	25.6 (43)	34.7 (829)
Total	14.3 (1008)	14.4 (423)	19.2 (1193)	21.5 (631)	18.0 (1427)	13.2 (539)	13.0 (760)	14.3 (434)	16.5 (6415)
Race									
White	12.0 (158)	11.0 (127)	18.8 (213)	22.3 (206)	16.4 (116)	10.1 (69)	11.7 (103)	12.1 (58)	15.6 (1050)
Black	15.1 (292)	16.0 (81)	19.2 (964)	20.9 (417)	18.1 (1283)	14.3 (449)	13.2 (653)	14.7 (375)	17.0 (4514)
Hispanic	14.8 (519)	16.6 (181)	20.0 (10)	40.0 (5)	7.1 (14)	0.0 (13)	0.0 (1)	0.0 (1)	15.1 (744)
Other	10.8 (37)	8.3 (24)	33.3 (6)	0.0 (1)	37.5 (8)	0.0 (6)	-- --	-- --	13.4 (82)
Total	14.3 (1006)	14.3 (413)	19.2 (1193)	21.5 (629)	18.0 (1421)	13.3 (537)	13.0 (757)	14.3 (434)	16.5 (6390)
Sex									
Male	5.5 (512)	6.2 (211)	5.9 (538)	9.1 (331)	9.2 (655)	5.2 (269)	3.9 (383)	3.2 (189)	6.4 (3088)
Female	23.4 (496)	22.6 (212)	30.1 (655)	35.3 (300)	25.5 (772)	21.2 (269)	22.1 (375)	22.9 (245)	25.9 (3324)
Total	14.3 (1008)	14.4 (423)	19.2 (1193)	21.5 (631)	18.0 (1427)	13.2 (538)	12.9 (758)	14.3 (434)	16.5 (6412)

*Calculations with race omit 25 missing cases; with sex omit 3 missing cases.

TABLE E 3.3

PERCENT OF YOUTHS EVER MARRIED, BY AGE, RACE, AND SEX, BY SITE*

Age	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
16	0.8 (353)	4.3 (140)	0.5 (416)	1.3 (228)	0.0 (478)	0.5 (193)	0.4 (267)	0.6 (178)	0.8 (2253)
17	2.4 (293)	9.0 (145)	1.9 (364)	5.3 (187)	1.4 (428)	0.0 (177)	1.3 (229)	0.7 (137)	2.4 (1760
18	6.3 (237)	12.6 (87)	3.6 (252)	6.5 (123)	0.9 (317)	1.0 (100)	5.0 (181)	7.9 (76)	4.5 (1373)
19	16.8 (125)	15.7 (51)	9.3 (161)	16.1 (93)	2.9 (204)	5.8 (69)	7.2 (83)	4.7 (43)	9.3 (829)
Total	4.5 (1008)	9.0 (423)	2.7 (1193)	5.7 (631)	1.1 (1427)	1.1 (539)	2.5 (760)	2.3 (434)	3.2 (6415)
Race*									
White	5.7 (158)	12.6 (127)	8.5 (213)	15.0 (206)	7.8 (116)	2.9 (69)	9.7 (103)	10.3 (58)	9.6 (1050)
Black	0.7 (292)	1.2 (81)	1.3 (964)	1.2 (417)	0.5 (1283)	0.9 (449)	1.4 (653)	1.1 (375)	1.0 (4514)
Hispanic	6.6 (519)	10.5 (181)	10.0 (10)	0.0 (5)	0.0 (14)	0.0 (13)	0.0 (1)	0.0 (1)	7.3 (744)
Other	2.7 (37)	0.0 (24)	16.7 (6)	0.0 (1)	0.0 (8)	0.0 (6)	-- --	-- --	2.4 (82)
Total	4.6 (1006)	8.7 (413)	2.7 (1193)	5.7 (629)	1.1 (1421)	1.1 (537)	2.5 (757)	2.3 (434)	3.2 (6390)
Sex*									
Male	2.0 (512)	3.8 (211)	0.7 (538)	3.0 (331)	0.3 (655)	0.0 (269)	0.5 (383)	1.1 (189)	1.2 (3088)
Female	7.3 (496)	14.2 (212)	4.4 (655)	8.7 (300)	1.7 (772)	2.2 (269)	4.5 (376)	3.3 (245)	5.0 (3324)
Total	4.6 (4008)	9.0 (423)	2.7 (1193)	5.7 (631)	1.1 (1427)	1.1 (538)	2.5 (758)	2.3 (434)	3.2 (6412)

*Calculations with race omit 25 missing cases; with sex omit 3 missing cases.

TABLE E 5.1

PERCENTAGE DISTRIBUTION OF HOURLY WAGE RATES, FALL 1977/SPRING 1978, BY SITE*

Wage Rate	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
≤$0.75	1.1	2.8	1.7	5.2	1.6	1.8	0.9	2.7	2.0
0.76 - 1.00	0.7	0.9	1.4	2.1	0.4	0.9	0.9	2.7	1.0
1.01 - 1.25	0.9	0.9	2.4	3.1	2.3	2.8	3.7	1.4	2.0
1.26 - 1.50	2.9	1.4	3.1	4.2	2.9	0.9	2.8	2.7	2.8
1.51 - 1.75	1.1	2.8	4.2	3.1	2.0	0.9	5.5	4.1	2.5
1.76 - 2.00	4.5	5.2	5.5	8.9	2.0	6.4	6.4	5.4	4.7
2.01 - 2.25	3.2	1.9	5.2	5.2	2.7	3.7	4.6	8.1	3.7
2.26 - 2.50	11.6	15.6	16.6	10.9	9.8	14.7	15.6	12.2	12.6
2.51 - 2.75	40.1	45.8	32.8	34.9	63.1	39.4	40.4	40.5	45.2
2.76 - 3.00	14.7	9.9	11.4	12.5	4.1	13.8	5.5	5.4	9.8
3.01 - 3.25	4.8	1.9	2.4	2.6	1.0	4.6	3.7	4.1	2.8
3.26 - 3.50	2.5	1.4	4.2	2.1	1.6	0.9	3.7	2.7	2.3
3.51 - 3.75	4.1	1.9	2.1	1.6	1.4	3.7	0.9	-	2.2
3.76 - 4.00	2.3	-	0.7	1.0	0.8	1.8	0.9	-	1.1
4.01 - 4.25	0.2	0.9	0.7	-	0.2	-	-	1.4	0.4
4.26 - 4.50	1.4	0.9	0.7	-	0.2	-	0.9	2.7	0.7
≥ 4.51	3.9	5.7	4.8	2.6	3.9	3.7	3.7	4.1	4.0
Total	100 (441)	100 (212)	100 (289)	100 (192)	100 (512)	100 (109)	100 (109)	100 (74)	100 (1938)

* The sample excludes missing values.
See notes in Table 6.6.

TABLE E 5.2

MEAN WAGE RATES BY SITE, AGE, RACE, AND SEX, FALL 1977/SPRING 1978*

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
Age									
16	2.50 (130)	2.48 (55)	2.11 (50)	2.19 (45)	2.55 (162)	2.38 (24)	2.29 (19)	2.26 (16)	2.43 (501)
17	2.70 (125)	2.44 (73)	2.53 (95)	2.34 (56)	2.53 (140)	2.56 (28)	2.44 (35)	2.56 (22)	2.53 (574)
18	2.71 (109)	2.73 (50)	2.50 (82)	2.42 (59)	2.49 (114)	2.65 (28)	2.45 (29)	2.43 (20)	2.56 (491)
19	2.83 (62)	2.39 (22)	2.70 (49)	2.34 (27)	2.45 (75)	2.61 (25)	2.67 (22)	2.61 (13)	2.60 (295)
Total	2.66 (426)	2.52 (200)	2.47 (276)	2.34 (187)	2.51 (491)	2.55 (105)	2.46 (105)	2.47 (71)	2.52 (1861)
Race									
White	2.66 (77)	2.39 (79)	2.34 (81)	2.20 (101)	2.48 (33)	2.58 (31)	2.68 (36)	2.42 (21)	2.43 (459)
Black	2.62 (110)	2.59 (28)	2.53 (194)	2.50 (85)	2.51 (451)	2.53 (70)	2.34 (68)	2.49 (50)	2.52 (1056)
Hispanic	2.67 (224)	2.62 (78)	2.00 (1)	2.25 (1)	2.80 (5)	2.74 (4)	- -	- -	2.66 (313)
Other	2.85 (14)	2.49 (9)	- -	- -	2.58 (2)	- -	- -	- -	2.70 (25)
Total	2.66 (425)	2.52 (194)	2.47 (276)	2.34 (187)	2.51 (491)	2.54 (105)	2.46 (104)	2.47 (71)	2.52 (1853)
Sex									
Male	2.77 (253)	2.60 (103)	2.54 (165)	2.48 (122)	2.54 (245)	2.73 (65)	2.55 (76)	2.64 (39)	2.61 (1068)
Female	2.52 (173)	2.44 (97)	2.37 (111)	2.07 (65)	2.49 (246)	2.27 (40)	2.24 (29)	2.25 (32)	2.41 (793)
Total	2.66 (426)	2.52 (200)	2.47 (276)	2.34 (187)	2.51 (491)	2.55 (105)	2.46 (105)	2.47 (71)	2.52 (1861)

* The sample excludes wage rates greater than $4.50 per hour.
See notes in Table 6.6.

TABLE E 5.3

PERCENTAGE DISTRIBUTION OF HOURLY WAGE RATES, SPRING 1977*, BY SITE

Wage Rate	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
≤$0.75	2.4	1.8	4.0	3.3	-	8.8	-	-	2.5
0.76 - 1.00	1.9	2.8	1.7	3.3	2.9	5.3	6.7	2.5	2.8
1.01 - 1.25	1.9	0.9	1.7	4.3	2.9	1.8	8.3	5.1	2.8
1.26 - 1.50	2.7	3.7	6.3	2.2	4.9	1.8	3.3	7.6	4.1
1.51 - 1.75	3.5	1.9	5.7	5.4	4.9	3.5	3.3	6.3	4.3
1.76 - 2.00	5.8	7.4	5.1	10.9	4.9	12.3	5.0	5.1	6.5
2.01 - 2.25	6.6	6.5	4.0	6.5	5.8	7.0	1.7	21.5	7.0
2.26 - 2.50	26.1	35.2	27.8	25.0	16.5	29.8	25.0	25.3	26.4
2.51 - 2.75	18.7	9.3	20.5	20.7	33.0	12.3	20.0	15.2	19.1
2.76 - 3.00	8.2	13.0	5.1	8.7	3.9	10.5	8.3	5.1	7.6
3.01 - 3.25	4.7	5.6	2.3	-	3.9	-	3.3	1.3	3.1
3.26 - 3.50	4.7	2.8	4.0	4.3	2.9	-	5.0	1.3	3.5
3.51 - 3.75	3.5	2.8	4.5	1.1	1.9	1.8	1.7	-	2.7
3.76 - 4.00	2.3	0.9	1.1	2.2	1.9	-	1.7	-	1.5
4.01 - 4.25	1.2	0.9	-	-	1.0	-	-	-	0.5
4.26 - 4.50	1.6	1.9	-	-	1.9	-	3.3	1.3	1.2
≥ 4.51	4.3	2.8	6.3	2.2	6.8	5.3	3.3	2.5	4.4
Total	100 (257)	100 (108)	100 (176)	100 (92)	100 (103)	100 (57)	100 (60)	100 (79)	100 (932)

* There are 6 missing observations.
See notes in Table 6.6.
The sample is restricted to those who were employed at some time during this period. The dash (-) indicates no observations for this cell.

TABLE E 5.4

MEAN WAGE RATES BY SITE, AGE, RACE, AND SEX, SPRING 1977*

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
Age									
16	2.36 (58)	2.23 (17)	2.01 (27)	2.09 (18)	2.13 (18)	2.04 (13)	1.77 (12)	2.08 (23)	2.15 (186)
17	2.48 (59)	2.42 (37)	2.22 (45)	2.14 (22)	2.40 (24)	1.78 (16)	2.44 (18)	2.29 (21)	2.32 (242)
18	2.50 (86)	2.57 (31)	2.11 (52)	2.30 (32)	2.59 (25)	2.21 (14)	2.48 (19)	2.34 (17)	2.45 (276)
19	2.74 (44)	2.59 (20)	2.54 (42)	2.59 (18)	2.69 (29)	2.24 (11)	2.94 (9)	2.18 (16)	2.59 (189)
Total	2.51 (247)	2.45 (105)	2.32 (166)	2.28 (90)	2.49 (96)	2.05 (54)	2.39 (58)	2.22 (77)	2.38 (893)
Race									
White	2.31 (56)	2.42 (48)	2.09 (52)	2.19 (50)	2.65 (15)	2.30 (13)	2.69 (21)	2.10 (19)	2.30 (276)
Black	2.44 (54)	2.58 (8)	2.43 (114)	2.39 (40)	2.45 (79)	1.95 (39)	2.22 (37)	2.25 (58)	2.35 (428)
Hispanic	2.63 (128)	2.52 (38)	- -	- -	2.35 (1)	2.18 (2)	- -	- -	2.60 (168)
Other	2.62 (8)	2.34 (7)	- -	- -	2.35 (1)	- -	- -	- -	2.48 (16)
Total	2.51 (246)	2.47 (101)	2.32 (166)	2.28 (90)	2.49 (96)	2.05 (54)	2.39 (58)	2.22 (77)	2.38 (888)
Sex									
Male	2.62 (138)	2.52 (57)	2.43 (99)	2.36 (70)	2.53 (67)	2.16 (37)	2.47 (46)	2.22 (42)	2.46 (556)
Female	2.36 (109)	2.40 (48)	2.16 (67)	1.99 (20)	2.40 (29)	1.79 (17)	2.11 (12)	2.22 (35)	2.25 (337)
Total	2.51 (247)	2.47 (105)	2.32 (166)	2.28 (90)	2.49 (96)	2.05 (54)	2.39 (58)	2.22 (77)	2.38 (893)

* The sample excludes wage rates greater than $4.50 per hour.
See notes in Table 6.6.
Footnotes in Table E5.1

TABLE E 5.5

PERCENTAGE DISTRIBUTION OF HOURLY WAGE RATES, SUMMER 1977, BY SITE

Wage Rate	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
≤$0.75	1.6	2.6	3.6	3.5	1.4	4.8	0.7	3.4	2.6
0.76 - 1.00	1.2	0.4	0.6	3.0	1.2	2.1	2.0	4.0	1.5
1.01 - 1.25	1.9	1.8	1.6	2.0	1.2	1.0	5.3	4.0	2.0
1.26 - 1.50	2.1	2.2	3.9	3.9	2.2	1.0	3.3	5.7	2.8
1.51 - 1.75	3.5	2.2	3.7	5.4	6.0	1.4	4.6	5.1	4.0
1.76 - 2.00	4.8	6.3	7.5	6.9	7.4	5.8	7.3	5.7	6.4
2.01 - 2.25	6.9	3.6	5.3	7.9	9.6	4.5	4.0	13.6	6.9
2.26 - 2.50	37.6	46.6	40.0	32.5	41.0	61.2	35.8	34.1	41.4
2.51 - 2.75	18.4	13.0	17.0	18.2	16.9	8.9	16.6	13.1	15.8
2.76 - 3.00	5.5	7.6	6.1	7.4	3.4	5.2	7.9	5.7	5.7
3.01 - 3.25	3.9	3.6	1.2	2.5	1.4	0.7	3.3	1.7	2.2
3.26 - 3.50	3.4	3.1	2.4	3.0	1.6	-	1.3	0.6	2.1
3.51 - 3.75	2.5	1.3	1.6	1.5	0.8	0.3	1.3	0.6	1.4
3.76 - 4.00	1.6	0.4	1.4	0.5	0.8	0.3	2.6	0.6	1.1
4.01 - 4.25	0.7	1.3	-	-	0.4	-	-	0.6	0.4
4.26 - 4.50	0.7	1.3	0.4	-	1.0	-	0.7	0.6	0.6
>4.50	3.7	2.2	3.7	2.0	3.6	2.7	3.3	1.1	3.1
Total	100 (556)	100 (223)	100 (493)	100 (203)	100 (498)	100 (291)	100 (151)	100 (176)	100 (2601)

See notes in Table 6.6.
Footnote in Table E5.1

TABLE E 5.6

MEAN WAGE RATES BY SITE, AGE, RACE, AND SEX, SUMMER 1977*

	Denver	Phoenix	Cincinnati	Louisville	Baltimore	Cleveland	Mississippi Pilot	Mississippi Control	Total
Age									
16	2.31 (163)	2.28 (65)	2.20 (142)	2.12 (58)	2.26 (137)	2.21 (101)	2.04 (37)	2.01 (53)	2.22 (756)
17	2.40 (173)	2.46 (80)	2.33 (157)	2.28 (58)	2.29 (144)	2.10 (91)	2.39 (49)	2.17 (58)	2.31 (810)
18	2.56 (142)	2.42 (47)	2.31 (117)	2.40 (52)	2.33 (128)	2.24 (55)	2.41 (38)	2.31 (37)	2.39 (616)
19	2.68 (67)	2.68 (26)	2.64 (59)	2.33 (31)	2.50 (71)	2.32 (36)	2.75 (22)	2.38 (26)	2.54 (338)
Total	2.45 (545)	2.42 (218)	2.33 (475)	2.27 (199)	2.33 (480)	2.20 (283)	2.36 (146)	2.18 (174)	2.33 (2520)
Race									
White	2.43 (81)	2.40 (70)	2.20 (80)	2.23 (77)	2.57 (28)	2.26 (35)	2.56 (40)	2.08 (32)	2.33 (443)
Black	2.46 (160)	2.39 (42)	2.35 (389)	2.30 (122)	2.31 (443)	2.18 (237)	2.30 (105)	2.21 (142)	2.31 (1640)
Hispanic	2.44 (287)	2.45 (94)	2.21 (4)	- -	2.19 (5)	2.37 (9)	- -	- -	2.44 (399)
Other	2.55 (17)	2.32 (9)	2.48 (2)	- -	2.18 (3)	2.30 (1)	- -	- -	2.44 (32)
Total	2.45 (545)	2.42 (215)	2.33 (475)	2.27 (199)	2.33 (479)	2.20 (282)	2.37 (145)	2.18 (174)	2.33 (2514)
Sex									
Male	2.55 (302)	2.38 (124)	2.41 (268)	2.41 (130)	2.34 (270)	2.21 (164)	2.42 (117)	2.20 (97)	2.39 (1472)
Female	2.33 (243)	2.48 (94)	2.21 (207)	2.01 (69)	2.31 (210)	2.18 (119)	2.14 (29)	2.17 (77)	2.26 (1048)
Total	2.45 (545)	2.42 (218)	2.33 (475)	2.27 (199)	2.33 (480)	2.20 (283)	2.36 (146)	2.18 (174)	2.33 (2520)

* The sample excludes wage rates greater than $4.50 per hour.
See notes in Table 6.6.
Footnote in Table E5.1.

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MDRC REPORTS ON THE ENTITLEMENT DEMONSTRATION

SCHEDULE FOR FORTHCOMING RESEARCH REPORTS

REPORT	ISSUES COVERED	DATE
Preliminary Report on Participation Rates and Return to School and School Drop-out Rates	• Participation rates of the baseline sample in the pilot sites through December, 1978 • Return to school and school drop-out rates	November, 1979
Implementation of Entitlement through September, 1979	• Implementation issues	March, 1980
Report on In-Program Impacts through Summer, 1979	• Participation rates • Employment impacts • Schooling impacts	April, 1980
Quality of Work	• Assessment of nature and quality of jobs provided	April, 1980
Private Sector Participation in Entitlement	• Issues of private sector involvement in the demonstration	June, 1980
Entitlement in Rural Area	• Implementation and participation issues in Mississippi and selected Tier II rural programs	September, 1980
Final Implementation Research Report	• Implementation issues	March, 1981
Report on In- and Post-Program Impacts through June, 1980	• Participation rates • Employment impact • Schooling impacts including return to school and school drop-out rates	April, 1981
Final Report on In- and Post-Program Impacts	• Post-program impacts through September, 1981	April, 1982
Summary Report on the Demonstration	------	June, 1982

PUBLISHED REPORTS

Opportunity for a Future: The Youth Entitlement Program. March, 1978

The Youth Entitlement Demonstration Program: A Summary Report on the Start-Up Period of the Youth Incentive Entitlement Pilot Projects January-June, 1978. January, 1979.

Schooling and Work Among Youth from Low-Income Households: A Baseline Report from the Entitlement Demonstration. Abt Associates, Inc. May, 1979

The Youth Entitlement Demonstration: An Interim Report on Program Implementation. April, 1979.